NASA Procedural Requirements

NPR 8735.2A
Effective Date: August 02, 2006
Expiration Date: August 02, 2012

COMPLIANCE IS MANDATORY

Management of Government Quality Assurance Functions for NASA Contracts (w/change 1, dated 8/9/2010)

Responsible Office: Office of Safety and Mission Assurance

Request for Requirement Waiver NRW 1400-44 to NPR 1400.1 NASA Directives Procedural Requirements

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NPR 8735.2A, Management of Government Quality Assurance Functions for NASA Contracts

Change History

Change#	Date	Description
1	8/9/2010	1. Adds paragraphs 2.5.1.1 and 2.5.1.2 to clarify allowances for performance of quality audits by accredited third party certification bodies. 2. Updates paragraph 2.5.2 to extend the minimum audit frequency from two years to three years when supported by a contractor's quality system performance.

Preface

P.1 Purpose

This NASA Procedural Requirements (NPR) sets forth Agency requirements for performance of Government contract quality assurance functions as required by Federal Acquisition Regulation (FAR) Part 46, NASA FAR Supplement (NFS) Part 1846, and NPD 8730.5, NASA Quality Assurance Program Policy. The purpose of Government contract quality assurance is to ensure that supplies and services acquired under Government contract conform to contract requirements.

P.2 Applicability

a. This NPR applies to NASA Headquarters; NASA Centers, including Government Component Facilities; and the Jet Propulsion Laboratory as specified in its contract.

b. This NPR provides requirements for the quality assurance functions to be provided by the Government on contracts for the supply of acquisition products and the performance of product-related services. The term "acquisition products" includes Government Furnished Equipment (GFE) (i.e., Government-procured equipment that is furnished to NASA prime contractors for integration into the final product). The term "services," as used in this NPR, refers to contractor work that directly supports the establishment or verification of product configuration (e.g., design, manufacture, nondestructive testing, laboratory testing, fabrication, assembly, integration, performance testing, maintenance, refurbishment, repair, calibration) or to contractor operation of the delivered product (e.g., hazardous test facility). The term "services" does not refer to Government contract quality assurance functions assigned to support contractors.

c. Except as provided in Appendix C, section 17, this NPR does not apply to Government contract quality assurance functions related to software. Software assurance functions are defined by NASA-STD-8739.8, as required by NPR 7150.2.

d. This NPR does not apply to quality assurance functions related to the acquisition of NASA facilities or to facilities maintenance operations. Quality assurance requirements for such acquisitions/services are performed in accordance with NPR 8820.2, Facility Project Implementation Guide, NPR 8831.2, Facilities Maintenance Management, and FAR/NFS regulations.

e. This NPR does not apply to basic and applied research or to information technology (IT) services. Government contract quality assurance for basic and applied research and IT services is governed by FAR Part 46 and NFS Part 1846.

P.3 Authority

a. 42 U.S.C. 2473(c)(1), Section 203(c)(1) of the National Aeronautics and Space Act of 1958, as amended.

b. 48 CFR Subpart 7.5, Federal Acquisition Regulations (FAR), Inherently Governmental Functions.

c. 48 CFR Subpart 9.2, FAR, Qualifications Requirements.

d. 48 CFR Subpart 9.3, FAR, First Article Testing.

e. 48 CFR Part 42, FAR, Contract Administration and Audit Services.

f. 48 CFR Part 46, FAR, Quality Assurance.

g. 48 CFR Part 1846, NASA FAR Supplement, Quality Assurance.

h. NPD 1280.1, NASA Management System Policy.

i. NPD 7410.1, Management of Contract and Grant Support Services Obtained from External Sources.

j. NPD 8700.1, NASA Policy for Safety and Mission Success.

k. NPD 8730.5, NASA Quality Assurance Program Policy.

P.4 References

a. NPR 6000.1, Requirements for Packaging, Handling, and Transportation for Aeronautical and Space Systems, Equipment, and Associated Components.

b. NPR 7120.5, NASA Program and Project Management Processes and Requirements.

c. NPR 7150.2, NASA Software Engineering Requirements.

d. NPR 8000.4, Risk Management Procedural Requirements.

e. NPR 8705.6, Safety and Mission Assurance Audits, Reviews, and Assessments.

f. NPR 8820.2, Facility Project Implementation Guide.

g. NPR 8831.2, Facilities Maintenance Management.

h. NASA-STD-8739.8, Software Assurance Standard.

i. AS7003, Nadcap Program Requirements.

j. ARP 9009, Aerospace Contract Clauses.

k. AS9100, Quality Management Systems - Aerospace - Requirements.

l. AS9101, Quality Management Systems Assessment.

m. AS9104, Requirements for Aerospace Quality Management System Certification/Registration Programs.

n. ISO/IEC Guide 61, General Requirements for Assessment and Accreditation of Certification/Registration Bodies.

o. ISO 9000, Quality Management Systems - Fundamentals and Vocabulary.

p. ISO 9001, Quality Management Systems - Requirements.

P.5 Cancellation

a. NPR 8735.2, Management of Government Safety and Mission Assurance (SMA) Surveillance Functions for NASA Contracts, dated August 15, 2000.

/s/

Bryan O'Connor
Chief, Safety and Mission Assurance

CHAPTER 1. Introduction

1.1 Government Contract Quality Assurance Overview

1.1.1 Government contract quality assurance refers to the various functions performed by the Government to determine whether a contractor has fulfilled contract obligations pertaining to quality and quantity. The term quality, when used within the context of this NPR, refers to compliance with any requirement that is contractually levied upon the contractor, including, but not limited to: safety, technical, item configuration, reliability, and quality system requirements.

1.1.2 Government contract quality assurance is provided in addition to, not as a substitute for, contractor responsibilities for assuring delivery of conforming product or services.

1.1.3 NASA may perform Government contract quality assurance functions directly, may delegate these functions to non-NASA Federal agencies, or assign these functions to quality assurance support contractors.

> *(Note: Final product acceptance, denoted by signature approval, is defined as an inherently Governmental function and may only be performed by Federal Government employees. Support contractors may, however, recommend acceptance of a product or service or act as a liaison for a Material Review Board (MRB) or other similar function.)*

1.1.4 Government contract quality assurance functions are planned and conducted on the basis of contract risk, per NPD 8730.5, to achieve confidence levels commensurate with the severity of consequences associated with noncompliance and to mitigate circumstances where there is elevated likelihood of noncompliance.

1.2 Roles and Responsibilities

1.2.1 The Chief, Safety and Mission Assurance, provides policy direction for all NASA quality assurance matters. Included in this role are technical guidance on the type and extent of quality assurance requirements appropriate for NASA acquisitions; functional oversight relative to Contract Administration and Audit Service (CAAS) quality assurance delegations; functional oversight relative to the adequacy of quality assurance personnel staffing and training; and independent assurance of the adequacy of program/project office quality assurance surveillance functions per NPR 8705.6.

1.2.2 The NASA Contract Administration Services and Audit Policy Group (NCASPG) provides oversight and policy determination for Contract Administration Services provided by non-NASA Federal agencies and NASA support contractors. The membership and responsibilities of the NCASPG are provided in NPD 7410.1.

1.2.3 NASA Center Directors are responsible for providing quality assurance services for all projects and programs hosted by, or assigned to, their Center, including the implementation of management controls to ensure proper performance of Government contract quality assurance functions. These responsibilities are typically delegated to the Safety and Mission Assurance (SMA) office (see paragraph 1.2.6 below).

1.2.4 Program and/or project managers are responsible for the quality of their assigned products and

services. To that end, they shall:

a. Plan and budget for implementation of Government contract quality assurance functions (Requirement 43042).

b. Identify high-risk and low-risk item acquisitions using input/support provided by the Center SMA office (Requirement 43043).

c. Develop Program/Project Quality Assurance Surveillance Plans (PQASP) per Chapter 3 of this NPR using input/support provided by the Center SMA office (Requirement 43044).

d. Appoint a program/project SMA Lead, or request SMA Director assignment/provision of a NASA SMA Lead, in accordance with local Center organizational governance procedures (Requirement 43045).

1.2.5 Contracting officers ensure performance of all necessary actions for effective contracting and safeguard the interests of the United States in its contractual relationships. To implement requirements of this NPR, contracting officers shall:

a. Make contract awards which ensure that the Government is not assuming unacceptable quality risk, and which take into consideration SMA office input regarding contractor past performance in meeting contract requirements related to safety, quality, and product configuration (Requirement 43047).

b. Take inputs from the program/project manager and/or the NASA SMA Lead to establish quality assurance requirements to be delegated to a non-NASA Federal agency via a Letter of Delegation (LOD) and/or to be performed under contract by a quality assurance support contractor (Requirement 43048).

c. Incorporate appropriate clauses or provisions into the prime contract that allow NASA, delegated Federal agency personnel, and/or quality assurance support contractors timely access to contractor and subcontractor facilities to perform quality assurance functions required by this NPR (Requirement 43049 1.1.05.c(10). The circumstances under which Government contract quality assurance is to be performed at source and at subcontractor facilities are described in FAR Sections 46.402 and 46.405, respectively.

1.2.6 NASA Center SMA Directors, as assigned by the Center Director, shall:

a. Implement Government contract quality assurance functions that are performed directly by NASA Center civil service personnel and their delegates and support contractors (Requirement 43052).

b. Provide support to contracting officers and program/project managers in the:

(1) Selection of acquisition sources that present acceptable quality risk (Requirement 43054).

(2) Contracting of competent quality assurance support contractors (see NPD 8730.5, paragraph 1.b(10)) (Requirement 43055).

(3) Selection and assignment of competent civil service quality assurance professionals, including the NASA SMA Lead, when requested by the program/project manager (see NPD 8730.5, paragraph 1.b(10)) (Requirement 43056).

(4) Development of Government contract quality assurance requirements to be incorporated into PQASPs, quality assurance LODs, or support contracts (Requirement 43057).

(5) Performance of contractor pre-award surveys, post-award surveys, quality audits, inspections, or other quality assurance functions considered necessary (Requirement 43058).

1.2.7 The NASA SMA Lead appointed by the program/project manager or the Center SMA Director shall:

a. Identify key processes, products, documents, records, and performance characteristics requiring Government assurance actions and determine the appropriate level and type of Government contract quality assurance actions to be applied (Requirement 43060).

b. Support the program/project manager and contracting officer in the development of the PQASP, LODs, and/or quality assurance support contracts (Requirement 43061).

c. Provide detailed information concerning the resource(s) required to perform required quality assurance activities, including preparation of the NASA Center estimate of required delegated agency or surveillance support contract support (Requirement 43062).

d. Ensure clear and mutual understanding of delegated/assigned quality assurance functions between NASA, the delegated agency, and quality assurance support contractors (Requirement 43063).

e. Ensure that delegated/assigned quality assurance functions are properly and effectively performed over the life of the program/project in accordance with the LOD or support contract (Requirement 43064).

f. Continuously evaluate the adequacy of the PQASP, LOD, and/or support contract based on contractor performance and other changing risk factors (Requirement 43065).

g. Coordinate and integrate quality assurance functions performed by different parties to ensure that all of the requirements of Chapter 2 of this NPR are satisfied and to avoid duplication of effort (Requirement 43066).

1.2.8 Non-NASA Federal agencies are delegated authority to perform CAAS on a reimbursable basis as formally agreed to in a LOD.

> *Note: The Defense Contract Management Agency (DCMA) and the Naval Research Laboratory are examples of activities that perform delegated CAAS functions.*

1.2.9 Quality assurance support contractors perform quality assurance functions on behalf of NASA as tasked under contract.

1.2.10 Third parties are independent organizations that perform specified quality assurance functions on behalf of private industry and Governmental organizations at large. Requirements related to third parties are provided in Chapter 7 of this NPR.

1.2.11 NASA personnel, at all levels, are responsible for reporting to the Office of Inspector General when they become aware of noncompliant conditions or failure experiences which might constitute evidence of possible fraud, malpractice, or other serious misconduct.

CHAPTER 2. Government Contract Quality Assurance Requirements

2.1 Low-Risk Items

2.1.1 Program/project managers shall identify low-risk item acquisitions in accordance with the criteria specified in paragraph 2.1.3 below (Requirement 43074).

2.1.2 Government contract quality assurance for acquisitions involving the supply of low-risk items shall be performed in accordance with (Requirement 43075):

a. FAR Part 46 and NFS Part 1846.

b. Procurement quality assurance requirements provided in the procuring organization's quality standard (e.g., AS9100 or ISO 9001 Section 7.4.3, Verification of Purchased Product).

c. Government Mandatory Inspection Point (GMIP) requirements per Chapter 8 of this NPR.

d. Final product acceptance requirements per paragraph 2.8 of this chapter.

2.1.3 Low-risk acquisitions involve the supply of products or performance of services where the product/service is noncomplex, or where the product/service is complex and where the following conditions apply:

a. The product/service is non-critical.

b. There is a satisfactory likelihood of product success. Determination of likelihood considers factors such as product/program maturity and past performance.

c. The consequences associated with product failure are determined to be acceptable. Assessment of consequences considers the following:

(1) Personnel safety.

(2) Product cost.

(3) Product criticality and importance to mission.

(4) Mission importance (e.g., significance to national interests or NASA strategic plan).

(5) Project categorization per NPR 7120.5.

2.2 High-Risk Items

2.2.1 Program/project managers shall identify high-risk item acquisitions (Requirement 43090 2.2.1(1)

High-risk items are products/services that are complex and do not meet the criteria specified in paragraph 2.1.3 above.

2.2.2 Government contract quality assurance functions for acquisitions involving the supply of high-risk items are identified in paragraphs 2.3-2.8 below. Government contract quality assurance functions, with the exception of paragraph 2.8, Final Product Acceptance, may be performed by a

NASA Center, delegated agency, or support contractor personnel as determined by the program/project manager.

2.3 Document Review

2.3.1.1 Document review shall be performed on a periodic basis and whenever document changes are made that affect quality system processes or product attributes (Requirement 43095).

2.3.1.2 Selection of documents for review shall be based on the criticality, complexity, cost and importance of the product or process that is documented, and past product/process performance (Requirement 43096).

2.3.2 Document review may be conducted as a separate process from, or in conjunction with, quality system audits.

2.4 Product Assurance

2.4.1 Contractor hardware products shall be assured by product examination, process evaluation, and record review as follows**:**

2.4.1.1 Product Examination: Supplier products shall be physically inspected, measured, and/or tested to ensure conformity to contract requirements (Requirement 43100).

2.4.1.2 Process Witnessing: Supplier work processes shall be personally witnessed to ensure compliance with prescribed work instructions and contract requirements (Requirement 43101). Work processes include processes related to manufacturing, fabrication, assembly, integration, repair, maintenance, refurbishment, test, and inspection.

2.4.1.3 Record Review: Recorded evidence demonstrating conformance to contract requirements shall be reviewed to ensure product and process conformance to contract requirements (Requirement 43103 2.4.1.2(1). Recorded data, including contractually required data deliverables (e.g., Safety Data Package, Structural Analysis and Reliability Predictions), may document work performance, product attributes, product configuration, product performance, or quality assurance actions performed by the contractor (inspections, tests, measurements).

2.4.2 The selection of product assurance actions and the sample size/frequency of attribute selection shall be based on the following risk factors: 1) the criticality, complexity, cost, and importance of product supplied, 2) the complexity and maturity of the process performed, 3) personnel safety considerations, and 4) the supplier's past quality performance related to the product supplied or process performed (Requirement 43105).

2.4.3 Government product assurance actions performed on a mandatory basis are referred to as GMIPs. GMIP requirements are provided in Chapter 8 of this NPR.

2.4.4 Product assurance attributes shall be pre-identified on checklists or by other documented methodology (Requirement 43107).

2.4.5 Accomplishment of product assurance actions shall be attested to by signature, legible printed name, and date or by an inspection control system such as inspection stamps or electronic medium (Requirement 43108 2.4.5(1).

> *Note: For the purposes of this NPR, inspection pliers are considered to be a form of inspection stamp.*

2.4.5.1 Signatures, stamps, and data entries shall identify the discrete item examined (including any unique product identification/traceability information), process witnessed, or record verified (Requirement 43110 2.4.5.1(1). Such documentation may be accomplished utilizing the contractor's approved electronic system for indicating inspection status or by the application of a signature or stamp to prerecorded planning documents or records (e.g., material test data) which contain this information.

2.4.5.2 Where stamps or an electronic medium is used, the inspection control system shall:

a. Indicate the date of acceptance (Requirement 43113).

b. Ensure the legibility and durability of stamp impressions and ensure that stamps do not interlock with other stamps (Requirement 43114).

c. Ensure that only properly authorized and qualified persons are permitted to apply stamps or make data entries and that individuals who are authorized to use stamps maintain control of their assigned stamp at all times (Requirement 43115).

d. Ensure that data entries and/or stamp impressions provide direct traceability to the individual applying the stamp or making the data entry (Requirement 43116).

2.4.5.3 Where product assurance accomplishment is attested by application of stamps to inspected supplies, the stamp shall not be applied in a manner prohibited by drawings or specifications or which may degrade the quality of the product (Requirement 43117).

2.4.6 Product assurance actions shall be performed at subcontractor locations only where necessary to ensure that the contracted organization maintains effective oversight of subcontractors or to ensure compliance with critical product attributes (see paragraph 8.3.f) (Requirement 43118).

2.4.7 Product assurance actions shall be performed by persons properly qualified and trained concerning the quality assurance technique being practiced and the specific product or processes for which assurance is being provided (Requirement 43119).

2.4.8 The control of monitoring and measuring devices used to perform product assurance actions shall comply with the same/applicable requirements invoked upon the contractor (Requirement 43120).

2.4.9 Product assurance actions performed on a sampling basis, for which there is a measurable population of items, shall be performed using statistically valid sampling plans to achieve prescribed confidence level objectives (Requirement 43121).

2.5 Quality System Evaluation

2.5.1 The contractor's quality system shall be reviewed to ensure compliance with invoked quality program requirements, including internally developed procedures. (Requirement 43123). Quality system evaluation may be conducted as a single audit or as a combination of discrete audits.

2.5.1.1 Quality system evaluation of prime contractors shall be conducted by NASA Centers, delegated agents, or NASA support contractors (Requirement XXXXX). Evaluation may be limited in scope in circumstances where the prime contractor is certified by an accredited SAE AS9100 Certification Body and where quality data analysis indicates acceptable risk.

2.5.1.2 Quality system evaluation of contractors other than prime contractors shall be conducted by

NASA Centers, delegated agents, NASA support contractors, or, for cases where quality data analysis indicates acceptable risk, by accredited Certification Bodies (Requirement XXXXX).

> *Note: "Prime contractor" is defined herein as an organization under direct NASA contract that supplies an integrated platform (e.g., aircraft, spacecraft) or a major system/equipment for integration into a NASA platform.*

2.5.2 The frequency of quality system audits shall be based on the contracted organization's quality history, but no less than once every three years (Requirement 43125).

2.5.3 The following quality system elements shall be reviewed where applicable and where invoked upon the contractor (Requirement 43126):

a. Control of documents.

b. Control of records.

c. Configuration management.

d. Personnel training, qualifications, and competence.

e. Design and development control.

f. Purchasing: Supplier evaluation/selection; purchasing information and flow-down of technical/quality requirements; verification of purchased product.

g. Production control and process control.

h. Product identification, traceability, and identification of inspection/test status.

i. Preservation of product and foreign object prevention, detection, and removal.

j. Calibration and control of monitoring, measuring, and test devices.

k. Monitoring and measurement: Internal audit; monitoring and measurement of processes; monitoring and measurement of product.

l. Control of nonconforming product.

m. Quality data analysis/trending.

n. Corrective action.

o. Control of Government Furnished Property.

p. Other quality program elements considered to represent unacceptable risk.

2.5.4 Quality system audits shall be performed and documented following written audit attributes, such as provided in AS9101, Quality Management Systems Assessment (Requirement 43143).

2.5.5 Quality system audit attribute selection shall be based on the importance of the attribute toward achieving product conformity (Requirement 43144).

2.5.6 Quality system auditing shall include product sampling, where applicable, to validate quality system effectiveness (Requirement 43145).

2.5.6.1 Product sampling shall be based on the criticality, complexity, and maturity of the product, personnel safety considerations, and the supplier's past quality performance related to the product (Requirement 43146).

2.6 Quality Data Analysis

2.6.1 Contractor quality data shall be collected and analyzed to identify problem areas (e.g., projects, products, processes, operations, organizations), common deficiency causes, quality trends, defect anomalies, and process variations (Requirement 43148).

2.6.2 Sources of data shall include contractor-generated metrics, NASA-identified nonconformances, post-delivery quality escapes, and quality data reported by delegated parties (e.g., DCMA, quality assurance support contractors, and accredited quality system registrars) (Requirement 43149).

2.6.3 Data shall be evaluated at established periodic intervals for the purpose of:

a. Adjusting the frequency and content of customer oversight actions, including allocation of quality assurance personnel resources (Requirement 43151).

b. Providing supporting rationale for acceptance/rejection of the contractor's quality system and/or written procedures (Requirement 43152).

c. Initiating corrective action based on identification of systemic problems and trends (Requirement 43153).

d. Sharing analysis with the contractor to identify quality system trends and areas of weakness (Requirement 43154).

2.7 Nonconformance Reporting and Corrective/Preventive Action

2.7.1 Government-identified nonconformances shall be documented and reported to the contractor for performance of corrective and preventive actions (Requirement 43156).

2.7.2 Corrective action requests shall be elevated to the appropriate level of contractor management based on problem criticality, recurrence, and/or nonresponsiveness (Requirement 43157).

2.7.3 Corrective action requests shall require identification of (Requirement 43158):

a. The root cause(s) for occurrence of the nonconformance.

b. The scope of the nonconformance (i.e, total population of nonconforming items based on the identified root cause(s)).

c. Remedial corrective actions taken concerning the product(s) found to be nonconforming.

d. Measures taken/planned to prevent recurrence of the nonconformity.

2.7.4 Government follow-up shall be performed to ensure effective accomplishment of contractor corrective/preventive actions (Requirement 43163 2.7.4(1). Government follow-up may consist of first hand observations or review of verifiable contractor submitted documentation.

2.7.5 Government identified nonconformances and corrective action reports shall be entered into an electronic nonconformance reporting and corrective action tracking system and, as appropriate for source evaluation/selection purposes, a past performance information management system (Requirement 43165).

2.8 Final Acceptance

2.8.1 Final acceptance constitutes acknowledgement that the supplies or services conform with applicable contract quality and quantity requirements, except where acceptance of nonconforming supplies is determined to be in the Government's interest (see FAR Section 46.407 and Subpart 46.5) or where provided for by other terms and conditions of the contract. The Government shall formally accept delivery of product or services based on performance of the following actions:

a. Final product inspection (Requirement 43168).

b. Validation that there are no outstanding corrective actions resulting from contracting activity or contractor-identified nonconformances affecting acceptability of product (Requirement 43169).

c. Validation that there are no outstanding engineering departures/waivers/deviations impacting acceptability of product and that all applicable engineering departures/waivers/deviations have been approved by the proper technical authority (Requirement 43170).

d. Validation that all required GMIPs have been accomplished (Requirement 43171).

2.8.2 Performance of final acceptance is an inherently Governmental function which is the responsibility of the NASA contracting officer or his/her Government delegate. Performance of final acceptance shall not be delegated to a non-Governmental entity (Requirement 43172).

Chapter 3. Program/Project Quality Assurance Surveillance Plan (PQASP)

3.1 Overview

FAR Subpart 46.4 requires the development of quality assurance surveillance plans for Federal acquisitions. This chapter provides requirements for Program/Project Office development of quality assurance surveillance plans for NASA programs and/or projects. The purpose of PQASPs is to identify, in a single unified document, all contractor work operations requiring Government surveillance and the specific method(s) for providing surveillance.

3.2 PQASP Preparation and Content

3.2.1 The PQASP shall:

a. Describe the activities, metrics, control mechanisms, and organizations that will be conducting quality assurance functions for the program/project (Requirement 43177).

b. Be a consolidated and integrated document (i.e., not divided among various/separate documents) (Requirement 43178 3.2.1B(1). The PQASP may be a part of a larger program/project safety and mission assurance plan or may be a stand-alone document.

c. Incorporate applicable requirements from FAR Part 46, NFS Part 1846, NPD 8730.5, Chapter 2 of this NPR, and other related documents (e.g., Program/Project Plan, Risk Management Plan, contract, GMIP schedule) (Requirement 43180). The PQASP may cite reference procedures for the performance of surveillance actions (e.g., inspections, tests).

d. Be initially prepared in conjunction with preparation of the Statement of Work and periodically adjusted thereafter based on changing risk factors as the program/project progresses through pre-award activities, Request for Proposal responses, and post-award activities (Requirement 43182 4.3.1.d(1). Risk factor considerations are provided in Appendix B of this NPR.

3.2.2 PQASPs shall contain the following:

3.2.2.1 Introduction. Identify the program/project under surveillance; summarize the program/project objectives; and summarize the contents of the applicable contract(s) (Requirement 43185).

3.2.2.2 Objectives. Identify the specific outcomes of quality assurance actions in terms that are quantifiable and measurable (Requirement 43186).

3.2.2.3 Reference Documents. Identify documents related to performance of quality assurance functions (e.g., NASA Directives, the Program/Project Plan, the Risk Management Plan, program/project requirements documents, the contract, invoked quality system requirements) (Requirement 43187).

3.2.2.4 Surveillance Functions. Identify the quality assurance surveillance functions to be performed for the program/project in accordance with Chapter 2 of this NPR and the following (Requirement 43188):

3.2.2.4.1 Document Review. Identify the quality system procedures to be reviewed and the

periodicity or schedule for document review.

3.2.2.4.2 Product Assurance.

a. Identify specific product examinations to be performed, including whether these actions are to be performed on a one-for-one, continuing, random, and/or periodic basis.

b. Identify specific processes to be witnessed, including whether these actions are to be performed on a one-for-one, continuing, random, and/or periodic basis.

c. Identify contractor records to be reviewed, including whether the records are to be verified on a one-for-one, continuing, random, and/or periodic basis.

d. Where sampling is called out, identify specific statistically based sampling plans for product examination, process witnessing, and record review.

e. List all required GMIPs, including product examinations, process witnessing, and record review actions.

f. Provide a schedule for review of contractor planning documents to ensure that all required GMIPs are correctly incorporated.

g. Describe the methodology for product assurance monitoring based on changing risk factors, including the addition/deletion of temporary GMIPs.

h. Describe the methodology for validating accomplishment of GMIPs.

3.2.2.4.3 Quality System Evaluation

a. Identify the specific quality system elements to be reviewed.

b. Develop an audit plan identifying the attributes to be audited. AS9101, Quality Management Systems Assessment, provides attributes for contractors working to AS9100 quality systems.

c. Provide a schedule for performance of quality system audits.

3.2.2.4.4 Quality Data Analysis

a. Identify the sources of contractor quality data.

b. Identify contractor performance metrics to be tracked.

c. Identify the format and periodicity for reporting contractor performance metrics.

3.2.2.4.5 Nonconformance Reporting and Corrective/Preventive Action.
Identify the tools, methodology, and format for:

a. Documentation of nonconformances.

b. Tracking of nonconformance resolution.

c. Approval of contractor corrective action responses.

d. Government follow-up to ensure contractor implementation of effective corrective measures.

3.2.2.4.6 Final Acceptance. Identify the tools and methodology for:

a. Conduct of final inspection, including identification of inspection attributes.

b. Validation that there are no outstanding corrective actions affecting acceptability of product.

c. Validation that there are no outstanding or unauthorized engineering departures impacting acceptability of product.

d. Validation that all GMIPs have been accomplished, including item-by-item accountability for each safety-critical GMIP.

3.2.2.5 Government Metrics. Identify the metrics to be used to assess and report accomplishment of Government quality assurance functions as prescribed in the PQASP and how these metrics will be used to adjust quality assurance activities (Requirement 43217).

3.2.2.6 Surveillance Organization. Identify the organizational entities of the program/project that will be performing surveillance (i.e., NASA, the delegated agency, and/or quality assurance support contractors), their assigned responsibilities, and their authority to act (Requirement 43218).

3.2.2.7 Quality Assurance Resources. Identify the personnel, funding, and material resources to be applied to the program/project quality assurance effort (Requirement 43219).

Chapter 4. Performance of Quality Assurance Functions by Non-NASA Organizations

4.1 Overview

4.1.1 This chapter provides general requirements for NASA contract quality assurance functions that are delegated to non-NASA Government agencies and/or assigned to support contractors. Specific requirements for work performed by delegated agencies, support contractors, and third parties are provided in Chapters 5, 6, and 7, respectively.

4.1.2 NASA Government contract quality assurance functions may be performed by NASA civil service employees or by a delegated Federal agency (e.g., DCMA). Certain functions, as outlined in Chapters 6 and 7, may also be performed by quality assurance support contractors or by an authorized third party (e.g., accredited quality system registrar, Nadcap special process accreditation). Government contract quality assurance functions performed by support contractors are required by FAR Part 46 to be performed under the direction of Government personnel.

4.2 NASA Technical Direction

The NASA SMA Lead shall act as a liaison for providing technical direction and recommendations to delegated agencies and support contractors on matters related to the following, as applicable (Requirement 43224):

a. Review and approval functions as defined in NASA requirement documents (e.g., NASA Directives, NASA-STDs) and as contractually specified.

b. Determination of the adequacy of fabrication, repair, and inspection processes, procedures, and techniques; inspection and test conditions, mandatory inspection points, workmanship standards, and conformance criteria; change control activity; the extent of retest after repair, modification, or substitution; and the adequacy of documentation related to these determinations.

c. Preparation of procedures, techniques, and plans for the evaluation of supplies and services.

d. Assessment of contractor quality assurance activities, including control over subcontractors.

e. Visits to contractor facilities to validate delegated or tasked work-hours, resolve conflicts between the delegated agency or quality assurance support contractor and the contractor, and to evaluate performance, including the adequacy of hardware/software nonconformance dispositions, corrective actions, and their related documentation and records.

f. Assistance in the interpretation of contract requirements related to safety, quality, and mission assurance, as coordinated with and concurred in by the contracting office.

g. Guidance in the development and operation of nonconformance and corrective action systems.

h. Processing MRB actions and dispositioning nonconforming material.

i. Evaluation of deviations, waivers, and engineering changes for safety, reliability, maintainability, or quality impacts.

4.3 Coordination of NASA Quality Assurance Functions

When there are multiple NASA delegations and/or tasks at a contractor's facility, duplication of effort and inconsistent surveillance methodologies are to be avoided. Prior to providing a new delegation and/or quality assurance support contractor tasking, NASA SMA Leads shall coordinate their efforts to:

a. Establish agreement among the delegating activities for interpretation of common requirements (Requirement 43235).

b. Establish agreement among the delegating activities for acceptance or rejection of delegated agency or surveillance support contractor operational methods (Requirement 43236).

c. Place common requirements on the delegated agency or surveillance support contractor for similar supplies and services (Requirement 43237).

4.4 Selection of Organizations Performing Quality Assurance Functions

4.4.1 Program/project offices or the Center SMA office, as delegated by the Center Director, shall select/assign the organization that will be responsible for performing Government contract quality assurance functions (NASA civil servants, a delegated agency, quality assurance support contractor, or an authorized third party) based on the qualifications and abilities of the organization in relation to the needs and objectives of the quality assurance function(s) (Requirement 43239).

4.4.2 The following factors shall be evaluated in the selection of an organization to perform quality assurance functions (Requirement 43240):

a. Final product acceptance is defined in 48 CFR Subpart 7.5 as an inherently Governmental function that may only be performed by NASA or other Federal agency personnel.

b. Quality assurance actions which verify compliance with critical contract requirements shall be performed by Federal agency personnel or under the direction and supervision of Federal agency personnel.

c. The long-term availability of personnel for the duration of the contract support.

d. Ability to provide quick response time.

e. Ability to implement specialized surveillance.

f. Technical, programmatic, product, and process training, qualifications, and certifications.

g. The availability of inspection and test facility.

h. The delivery schedule requirements.

i. Contract quality provisions including frequency and timing of inspections/monitoring.

j. The technical nature of the product and specialized skills/knowledge needed.

k. The location of other delegations or task orders at nearby facilities.

4.5 Planning Conference

4.5.1 A quality assurance planning conference between NASA and the delegated agency or quality assurance support contractor ensures that support requirements, operating channels, and procedures are thoroughly/mutually understood prior to transmitting LODs or task orders. A face-to-face meeting is required when the contractor under surveillance has no previous history or when there are critical or complex processes involved.

4.5.2 The NASA SMA Lead, in coordination with the contracting office technical representative and other interested/authorized contracting office attendees, shall conduct the planning conference prior to the post-contract award conference (Requirement 43254).

4.5.3 The NASA SMA Lead shall ensure that the planning conference includes discussions of the following:

a. Contract and subcontract quality requirements (Requirement 43256).

b. End-use and criticality of supplies and services (Requirement 43257).

c. Current procedures and general operations, particularly those applicable to supplies and services similar to those being procured (Requirement 43258).

d. Technical direction to be given to the contractor (Requirement 43259).

e. Functions to be delegated or tasked and the performance desired (Requirement 43260).

f. Special skills, knowledge, qualifications, training, and certifications required (Requirement 43261).

g. Quality assurance functions to be performed at the contractor's facility by NASA personnel (Requirement 43262).

h. Channels of communication (Requirement 43263).

i. Past quality assurance history of the contractor, known contractor deficiencies, and the contractor's progress in correcting deficiencies (Requirement 43264).

j. MRB authority (Requirement 43265).

k. Redelegation and flowdown of requirements (Requirement 43266).

l. Interface situations arising from partial delegations, Department of Defense delegations, or other NASA delegations in the same facility (Requirement 43267).

m. Response time for mandatory inspections (Requirement 43268).

n. NASA, delegated agency, and contractor responsibilities related to the reporting, tracking, corrective action resolution, and closure of contract nonconformances (Requirement 43269) .

4.6 Management of Delegated Functions

4.6.1 NASA Center Directors shall develop and implement procedures to monitor and control hours associated with the performance of delegated/assigned functions (Requirement 43271 4.6.1(1). The purpose for monitoring/controlling hours is to assure that the Center is receiving equitable Government contract quality assurance services for the amount funded and that funding amount will be sufficient to allow performance of all required services.

4.6.2 The NCASPG shall agree in advance to the planned level of CAAS support and shall examine for reasonableness the hours reported and charged (Requirement 43273).

4.6.3 NASA Center Directors shall report any significant changes in the overall estimate (a variation of more than 15 percent) to the NASA Headquarters Office of the Chief Financial Officer and to the NASA Headquarters Office of Safety and Mission Assurance (Requirement 43274).

4.7 Monitoring of Delegated Agency and Support Contractor Performance

4.7.1 NASA SMA Leads shall establish management controls to ensure adequate performance of delegated/tasked quality assurance functions (Requirement 43276).

4.7.2 NASA SMA Leads shall evaluate performance on a continuing basis to ensure that LOD and support contract requirements are complied with and remain current (Requirement 43277 4.7.2(1).

Note: Evaluation activities can include independent assessments, surveys, periodic review of plans and reports, observation of performance, and evaluations and assessment of work-hour reporting.

4.7.3 NASA SMA Leads shall provide evaluation results to the delegated agency/quality assurance support contractor (Requirement 43279).

4.7.4 Contracting officers shall incorporate requirements into LODs and support contracts for delegated agencies and quality assurance support contractors to monitor their own performance and resource utilization and provide performance measurement data to NASA on a specified periodic basis (Requirement 43280).

4.8 Inadequate Quality Assurance Support

4.8.1 Upon discovery that the delegated agency or the quality assurance support contractor is providing inadequate quality assurance support that does not comply with the LOD or support contract, as applicable, the contracting officer, in coordination with the NASA SMA Lead, shall formally request corrective action from the delegated agency or support contractor (Requirement 43282).

4.8.2 The existence of one or more of the following conditions constitutes inadequate quality assurance support:

a. Lack of an adequate plan describing quality assurance functions to be performed.

b. Unsatisfactory performance of delegated and/or contracted functions, as evidenced by:

(1) NASA observations.

(2) Inadequate quality of delivered supplies or services.

(3) Mishaps or process escapes revealing significant contractor quality system inadequacies.

c. Unsatisfactory or untimely reports or records demonstrating proper implementation of delegated or tasked quality assurance functions (e.g., quality status reports, process flow charts, audit records).

d. Use of unqualified personnel.

e. Lack of adequate and/or untimely resource reporting to NASA.

f. Inadequate allocation of internal resources (personnel or funding).

Chapter 5. NASA Letters of Delegation

5.1 Overview

This chapter describes the planning, composition, and issuance of LODs which identify specific delegated Government contract quality assurance functions. LODs are the authoritative link between NASA and the delegated agency.

5.2 Planning Delegations

5.2.1 NASA Centers directly manage CAAS performed by other agencies. Delegation of contract administration functions is the responsibility of the contracting officer, who accomplishes this function through issuance of LODs.

5.2.2 Contracting officers shall:

5.2.2.1 Issue delegations within 10 calendar days of contract award (Requirement 43298).

5.2.2.2 Request that delegated agencies provide notification of LOD acceptance within 30 calendar days of receipt (Requirement 43299).

5.2.2.3 Specify that authorized redelegations be issued within 15 calendar days of acceptance of the original delegation (Requirement 43300 5.2.2.3(1).

> *Note: Letters of redelegation are prepared and processed by the delegated agency with notification to the contracting officer that issued the original delegation.*

5.3 LOD Content

5.3.1 Contracting officers shall incorporate the applicable requirements and text from the template provided in Appendix C of this NPR into their LODs (Requirement 43305).

5.3.2 Contracting officers shall include the following in their LODs:

a. Name, location, and telephone number of the designated SMA Point of Contact (POC) who serves as NASA's principal POC and technical/contractual authority liaison for matters pertaining to the delegation and a request for the delegated agency to include this information in letters of redelegation (Requirement 43005).

b. The identification of any quality assurance decisions which require review by the NASA SMA Lead prior to, and after acceptance for, the Government (Requirement 43306).

c. Point of contact for obtaining assistance with locating any NASA-unique documents (Requirement 43307).

d. Dates, frequency, and distribution for submittal of required delegated agency reports (Requirement 43308).

e. Information concerning assignment of NASA technical representatives at the contractor's facility, including names and functions to be performed (Requirement 43309).

f. Request for the name of the delegated agency representative to serve as the principal point of contact for the facility where the delegated functions are to be performed (Requirement 43310).

g. Extent of redelegation authority (Requirement 43311).

h Identification of surveillance functions to be performed by the delegated agency utilizing the template provided in Appendix C of this NPR (Requirement 43312).

i. Criteria for delegated agency selection of mandatory actions, if applicable (Requirement 43313).

j. Special instructions on preparation and distribution of shipping and acceptance documents (Requirement 43314).

k. Identification of the delegated agency's responsibility for interim acceptance and for support at the remote site where final acceptance is to occur (for circumstances where final acceptance of supplies and services is not to occur at the contractor's facility) (Requirement 43315).

l. Instructions regarding the respective responsibilities and authority of the delegated agency and NASA personnel (for circumstances where the delegated activities involve interface with NASA personnel (e.g., end item test and inspection)) (Requirement 43316).

m. Identification of special training and qualification requirements for personnel performing delegated functions, including special process certifications (e.g., nondestructive testing, workmanship) and job classifications or competencies of personnel needed (e.g., safety engineer) (Requirement 43317).

5.3.3 Contracting officers shall maintain a central file of LODs for their Center (Requirement 43318).

5.4 Redelegations

Redelegation is the formal action taken by a delegated agency when a portion of the required SMA functions cannot be performed because of geographical location, facility cognizance, technical or administrative capability limitations, or inter-Governmental Agency agreements. The NASA Center may choose to withhold redelegation authority, provide complete redelegation authority, or provide the delegated agency with specific directions on functions to be redelegated.

5.5 Action upon Completion of Delegated Functions

5.5.1 The contracting officer shall maintain delegations at all tiers for the same period of time as required for records to be maintained in the contract/subcontract under surveillance (Requirement 43321).

5.5.2 Delegated agency facility quality assurance files are normally considered closed when the last supplies/services on the contract have been delivered/performed.

5.5.3 Delegations may be reopened within one year after contract completion and shall be retained for easy retrieval (Requirement 43323).

5.5.4 The contracting officer shall advise the delegated agency to hold the delegation open when conditions exist or are expected that would justify extension of the contract period of performance (Requirement 43324).

Chapter 6. Quality Assurance Support Contracts

6.1 Overview

This chapter describes considerations for the planning, composition, and issuance of quality assurance support contract(s). These contracts assign specific Government contract quality assurance functions to be performed at a contractor location and serve as the authoritative link between NASA and the designated quality assurance support contractor.

6.2 Planning Quality Assurance Support Contracts

Contracting officers shall issue quality assurance support contracts in sufficient time to permit accomplishment of assigned quality assurance functions coincident with the commencement of contractor work operations (Requirement 43327).

6.3 Quality Assurance Support Contract Contents

6.3.1 Contracting officers shall include the following contents in quality assurance support contracts:

a. Applicable requirements and text from the template provided in Appendix C of this NPR (Requirement 43330).

b. Identification of quality assurance surveillance functions to be performed by the support contractor utilizing the template provided in Appendix C of this NPR (Requirement 43331).

6.3.2 Quality assurance support contracts are not to include performance of inherently Governmental functions as defined in 48 CFR 7, Subpart 7.5 (Requirement 43332 6.3.2(1).

> *(Note: Final product acceptance, denoted by signature approval, is defined as an inherently Governmental function and may only be performed by Federal Government employees. Support contractors may, however, recommend acceptance of a product or service or act as a liaison for a MRB or other similar function.)*

Chapter 7. Third Party Certification/Accreditation

7.1 Certain Government contract quality assurance functions, such as Quality System Evaluation and Process Witnessing, may be performed by third party certification/registration bodies or in accordance with accreditation programs approved by this NPR. The following certification/ registration bodies and accreditation programs, where contractually invoked, are authorized to perform Government contract quality assurance functions for NASA contracts:

7.1.1 AS9100 certification/registration bodies accredited in accordance with AS9104.

7.1.2 ISO 9001 certification/registration bodies accredited in accordance with ISO Guide 61.

7.1.3 Nadcap accreditation program in accordance with AS7003.

Chapter 8. Government Mandatory Inspection Points (GMIPs)

8.1 General

GMIPs are NASA-mandated product assurance actions that must be performed at, or prior to, a specific point in the product's life by NASA or a delegated agent of NASA. Product assurance actions include product examination, process witnessing, and record review (often referred to as "verification"). Delegated agents include non-NASA Government agencies and quality assurance support contractors that are independent of the contractor under surveillance.

8.2 Selection and Assignment of GMIPs

8.2.1 Program/project Offices, with NASA SMA Lead and SMA office support, shall define GMIPs based on an analysis of risks related to contract noncompliance (Requirement 43342). This includes the following:

a. Safety-critical GMIPs are defined in order to assure conformance to hardware characteristics, manufacturing process requirements, operating conditions, and functional performance criteria that, if not met, can result in loss of life. A safety-critical GMIP shall be assigned for every (i.e., 100 percent) attribute/requirement where noncompliance could credibly result in loss of life. (Requirement 43343).

b. For circumstances where noncompliance could not credibly result in loss of life, but could result in serious injury, loss of mission, or loss of a significant mission resource, GMIPs shall be assigned to attain heightened confidence of contract compliance (Requirement 43344 8.2.1b(1).(Requirement 43344). Per NPD 8730.5, confidence levels are to be commensurate with the severity of consequences that would be incurred in the event of noncompliance.

c. Where analysis indicates an unacceptable likelihood of conformance with a key product attribute or process requirement, GMIPs shall be assigned to attain satisfactory confidence of contract compliance (Requirement 43346 8.2.1c(1). Per NPD 8730.5, confidence levels are to be commensurate with the severity of consequences that would be incurred in the event of noncompliance. Factors indicting potential elevated likelihood include process maturity, complexity, and contractor past performance.

d. Program/project offices shall consider the following sources of information during the GMIP definition process (Requirement 43348):

(1) Design, safety, drawing, engineering, configuration, and technical document reviews.

(2) Reliability, maintainability, and system safety tests and analyses.

(3) Development, qualification, certification, and acceptance tests.

(4) Failure Mode and Effects Analysis/Critical Items List and Hazards Analysis.

(5) Interface and interchangeability requirements.

(6) Contractor fabrication procedures, process control instructions, and design standards/manuals.

(7) Performance of root cause analyses and implementation of preventative and corrective actions.

(8) Nonconformance reports and records of contractor/supplies/services history.

(9) Feedback from the NASA Center or the delegated agency.

(10) Critical item and critical characteristic lists developed by the contractor.

(11) Contractor quality assurance manuals, requirements, and selected quality system documents.

e. Program/project offices shall consider the following conditions, operations, and quality assurance functions during the GMIP definition process (Requirement 43360):

(1) Validation of critical process controls.

(2) Qualification, certification, and first article tests.

(3) Acceptance tests and/or inspection of hardware and software end items and selected nondeliverable hardware, tooling, or software. This includes test readiness.

(4) Preshipment review (data package review, shipment readiness, and shipping/acceptance document sign-off).

(5) Inspection and test of repaired, reworked, or modified supplies.

(6) Teardown, buildup, test, and inspection of Government equipment returned for overhaul or refurbishment.

(7) Failure analyses.

(8) Refurbishment of previously accepted supplies.

(9) Products/processes that have a history of frequent configuration changes or frequent fabrication, inspection, and test nonconformances.

(10) Configuration verification.

(11) Hazardous or critical industrial operations such as lifting operations, contamination inspections, shipping operations.

f. The delegated agency or the quality assurance support contractor, as approved by the NASA SMA Lead, may create and assign GMIPs on a temporary basis based on a determination of elevated risk or adverse trends.

8.3 Performance of GMIPs

Personnel responsible for the administration and performance of GMIPs shall:

a. Perform 100 percent of all assigned GMIPs in strict accordance with the prescribed technical criteria (Requirement 43374).

b. Request formal disposition/authorization for GMIP omissions, waivers, or deviations from the designated NASA technical authority (Requirement 43375 8.3.b(1). The designated technical authority will normally be the person or office that selected and defined the GMIP requirement and may reside in the Center SMA office, program office, or engineering office in accordance with local Center governance procedures.

c. Indicate as acceptable only those characteristics that have been personally examined, witnessed,

or verified (Requirement 43377).

d. Perform GMIPs after contractor personnel have made their acceptance decisions, except in those cases where concurrent inspections/tests are necessary to avoid the need for destructive testing or to prevent excessive costs or potential time delays (Requirement 43378).

e. Perform GMIPs as late as practicable in the material fabrication/installation/delivery cycle for circumstances where GMIP attributes can be altered (e.g., contamination) (Requirement 43379).

f. Perform GMIPs at subcontractor facilities only when required in the Government's interest, as specified in FAR Section 46.405 (Requirement 43380).

g. Attest to the completion of GMIPs in accordance with the requirements of paragraph 2.4.5 of this NPR (Requirement 43381).
h. Periodically sign a statement indicating that they understand that their signature, application of a stamp, or data entry is a professional, individual warranty (guarantee) that they personally examined the product, witnessed the process, or verified the record as literally stated for the GMIP acceptance criteria (Requirement 43382).

i. Maintain positive controls which assure that all assigned GMIPs are incorporated into planning documents, where applicable, and accomplished (Requirement 43383).

j. Report, track, and ensure proper resolution of nonconformances identified during the conduct of GMIPs in accordance with section 2.7 of this NPR (Requirement 43384).

k. Where GMIP accomplishment is attested to by stamps/signatures on contractor developed/maintained planning records or data, ensure that such records are readily retrievable (Requirement 43385).

8.4 Special Requirements for Safety-Critical GMIPs

a. Safety-critical GMIPs shall be performed by Government personnel or under the direction and supervision of Government personnel (Requirement 43387).

b. When safety-critical GMIPs are assigned to non-Governmental personnel, NASA supervision shall include periodic/random spot checks of GMIP performance, and other measures as necessary, to ensure that such persons are properly trained and qualified and are carrying out these inspections in an objective and competent manner (Requirement 43388).

c. Safety-critical GMIPs shall include product examination or process witnessing versus record review whenever practicable (Requirement 43389).

d. Contracting officers shall include in contracts a statement expressly prohibiting the contractor from continuing work operations planned subsequent to the performance of designated safety-critical GMIPs until Government accomplishment of the mandatory inspection point (Requirement 43390).

e. For circumstances where destructive testing would be necessary to assure compliance with a safety-critical attribute, contractor assurance actions and associated GMIPs shall involve, wherever possible, the testing of a product sample that is determined to reliably/accurately represent the final product attribute (Requirement 43391).

8.5 Contractor Interface for Performance of GMIPs

The onsite Government representatives (i.e., NASA, delegated agency, or support contractors) shall work with the contractor to:

a. Incorporate GMIPs as hold points on contractor work planning documents (Requirement 43393).

b. Develop a GMIP notification process that assures sufficiently advance Government notification of work operations involving GMIPs, that results in timely performance of GMIPs, and that results in minimal disruption to contractor work operations (Requirement 43394).

c. Establish specific guidelines and requirements regarding contractor continuance of work operations in the event that the Government does not arrive within a specified agreed-to time frame to perform an assigned GMIP (Requirement 43395).

Appendix A. Definitions

Contract: A mutually binding legal relationship obligating the seller to furnish the supplies or services (including construction) and the buyer to pay for them. It includes all types of commitments that obligate the Government to an expenditure of appropriated funds and that, except as otherwise authorized, are in writing. In addition to bilateral instruments, contracts include (but are not limited to) awards and notices of awards; job orders or task letters issued under basic ordering agreements; letter contracts; orders, such as purchase orders, under which the contract becomes effective by written acceptance or performance; and bilateral contract modifications. Contracts do not include grants and cooperative agreements covered by 31 U.S.C. 6301 et seq. or Space Act agreements covered by 41 U.S.C. 2473.

Complex Item: A product that has quality characteristics not wholly visible in the end item, for which contract conformance cannot be determined through inspection, measurement, and/or test of the end item, and for which conformance can only be established progressively through the item's life by precise measurements, tests, and controls applied. Examples of complex items include assemblies, machinery, equipment, subsystems, systems, and platforms.

Complex Work: The design, manufacture, fabrication, assembly, testing, integration, operation, maintenance, refurbishment, or repair of complex items.

Critical: The condition where failure to comply with prescribed contract requirements can potentially result in loss of life, serious personal injury, loss of mission, or loss of a significant mission resource. Common uses of the term include critical work, critical processes, critical attributes, and critical items.

Delegated Agency: An organization providing Contract Administration Services (CAS) quality assurance support to NASA on designated contracts. Delegated agencies that provide NASA CAS support include the Defense Contract Management Agency (DCMA) and the Office of Naval Research (ONR).

Final Acceptance: The act of an authorized representative of the Government by which the Government, for itself or as an agent of another, assumes ownership of existing identified supplies tendered or approves specific services rendered as partial or complete performance of the contract.

Government Contract Quality Assurance: Quality assurance functions performed by, or for, the Government at the contract location to determine whether a contractor has fulfilled the contract obligations pertaining to contract quality. Safety, reliability, and maintainability functions are also included within the scope of this term.

Government Mandatory Inspection Point (GMIP): A specific step, sequence, or time in a product's life when a NASA-mandated product assurance action (e.g., product examination, process witnessing, record review) must be performed by NASA, a delegated Government agency, or by a NASA quality assurance support contractor.

Nadcap: An aerospace industry third party accreditation program which conducts supplier audits and provides accreditation/certification that a supplier is competent to furnish a specified product, process, or service. Nadcap program requirements, including the criteria, terms, and governance structure for Nadcap accreditation, are provided in SAE AS7003. Details regarding Nadcap accreditation services, a list of processes for which Nadcap provides supplier accreditation, and Nadcap auditing attributes can be found at http://www.pri-network.org/Nadcap/.

Process Witnessing: Physical observation of a contractor test or work process to ensure that the process is being correctly performed in accordance with prescribed procedures and contract requirements.

Product Examination: Physical inspection, measurement, or test to ensure product conformity to prescribed technical/contract requirements.

Program/Project Quality Assurance Surveillance Plan (PQASP): A consolidated set of detailed instructions for the performance of Government contract quality assurance actions related to a specific program/project. Examples of PQASP contents include lists of contractor documents, data, and records to be reviewed; products and product attributes to be examined; processes and process attributes to be witnessed; quality system elements/attributes to be evaluated; sampling plans; and requirements related to quality data analysis, nonconformance reporting and corrective action tracking/resolution, and final product acceptance.

Quality Assurance Letter of Delegation (LOD): Documented instructions from NASA to a Federal Agency detailing quality assurance support responsibility and services required in support of a designated contract.

Quality Assurance Support Contractor: A non-Government entity on contract with NASA and independent of the contractor providing supplies or services that is tasked to perform specified quality assurance surveillance functions (e.g., GMIPs).

Record Review: Review and verification that recorded data properly evidences conformance to contract requirements (e.g., invoked drawings, specifications). Recorded data may document work performance, product attributes, product configuration, product performance, or quality assurance actions performed by the contractor.

Safety-Critical GMIP: GMIPs performed to ensure compliance with contract requirements that, if violated, can result in loss of life. This includes witness or verification of hardware, manufacture, assembly, integration, test, maintenance, operation, or nonconformance resolution tasks which, if incorrectly accomplished, could result in loss of life.

For terms not defined above or elsewhere in a NASA Headquarters authorized/promulgated document, the definitions provided in ISO 9000 apply.

Appendix B. Program/Project Risk Considerations

This Appendix discusses the identification and analysis of potential risk factors to be considered during development of the PQASP.

1. Identification of Contract Risks.

For each contract, there is a set of characteristics which have been identified as contract requirements and/or deliverable items. These contract-specified items are established during the formulation subprocess of the program/project and have been determined to be critical for the overall contract performance. Other nonspecified items are often related to practices or product features that the contractor has been given flexibility in performing. In identifying contract delivery risks during contract development, source selection, contract award negotiation, and contract performance, contract-specified items should be a primary area of consideration. In order to accomplish these functions effectively, it is imperative that the NASA Safety and Mission Assurance Lead has substantial, direct involvement with the contract development, source selection, contract award, and contractor performance evaluation activities. Typical risks include, but are not limited to, clarity and stability of requirements, introduction of new or development technology or processes, schedule, compatibility, interfaces, or other specified design and/or process conditions.

2. Analyzing the Impact of Contract Risks.

2.1 After establishing the list of potential contract delivery risks, each risk will need to be evaluated to estimate the consequences of the risk, the likelihood of the risk occurring, and the timeframe in which action must be taken to ensure effective mitigation of the identified risk. NPR 8000.4, Risk Management Procedural Requirements, provides the overall process requirements for performing these analyses.

2.2 The following are considerations in establishing consequence (severity) of the risks:

a. Safety - Do risks involve risk to the public, risk to astronauts and pilots, risk to NASA workforce, risk to high value equipment and/or mission success?

b. Cost - Could risk have a significant impact to the overall project/process operating cost?

c. Schedule - Could risk impact a "long-lead item," involve a deliverable that is not off-the-shelf, have limited contingency or margin options, or otherwise have the potential to significantly impact project/process schedule?

d. Performance - Could risk significantly reduce user group access, availability, or mission life or impact the mission success criteria?

e. Other - Could risk affect national or NASA prestige?

2.3 For the identified risks, evaluation is required to establish the likelihood of occurrence. This determination can involve a combination of quantitative as well as qualitative considerations. The contract risks will change throughout the program/project life cycle, requiring periodic re-evaluation. Considerations in determining the likelihood of occurrence include the following:

a. Goals - Do the contract requirements involve high-precision, sensitive components, or difficult-to-obtain performance features?

b. Margin - Do the contracted requirements have a low factor of safety, margin of error, or tight design tolerances?

c. Control - Do the contracted requirements involve processes prone to human error or issues with process stability, repeatability, or output control?

d. Redundancy - Do the contracted requirements involve safety or mission success functions that are not failure tolerant?

e. Maturity - Do the contracted requirements involve new technology, a new application, or nonstandard process techniques, tools, or equipment?

f. Heritage - Do the contracted requirements have a prior history of performance or capability issues for the same or similar design or processes?

g. Inspection - Do the contracted requirements fail to specify receiving, in-process, and/or final inspection, test, or monitoring at the contract location that would be an effective screen?

h. Problems/Issues - During the performance of the contract, have technical and/or quality issues occurred which require direct Government involvement to resolve the issue?

i. Contractor Quality System - Is there a lack of confidence in the quality system of the contractor for any of the following reasons:

(1) NASA does not have knowledge of a quality assurance audit performed by a credible source.

(2) The contractor has not demonstrated acceptable past quality performance.

(3) The contractor is new to working with NASA and NASA-type requirements.

(4) The contractor has experienced instability in their quality system or continuous nonconformance issues with any aspect of their quality system.

(5) The contractor has insufficient performance measures or incentives for contract monitoring.

(6) The quality expectations for contract deliverables are not sufficiently detailed.

Appendix C. Letter of Delegation (LOD) Requirements

This appendix provides requirements and sample text for NASA LODs. Requirements are identified as either mandatory (i.e., applicable to all LODs) or discretionary. Discretionary requirements will vary from contract to contract due to projected program/project risk. Regardless of whether a requirement is mandatory or discretionary, contracting officers are encouraged to use the standardized sample text.

The delegation requirements of this appendix are not intended to be all inclusive or to preclude contracting officers, program/project management, or SMA personnel from incorporating additional/amplified LOD requirements based on program/project needs.

The requirements of this document have been developed in a menu format, enabling contracting officers to readily identify whether a surveillance function is to be delegated or retained. Where blocks are placed beside a surveillance function, delegation or retention of the function is discretionary. A block placed beside a section heading represents the entire section (i.e., all paragraphs within the section) unless otherwise indicated. Sections and paragraphs that do not have blocks are mandatory requirements to be incorporated into all delegations. When a bracket and X ([X]) appear within the text of a paragraph, specific criteria must be identified. When parenthesis "( )" appear within the text, an "X" is to be placed to indicate delegation of the requirement.

> *(Note: The requirements of this appendix are implemented by Procurement Information Circular (PIC). In the event of a conflict between the LOD technical content specified in the PIC and the technical content specified in this appendix, the requirements of this appendix take precedence.)*

The remainder of this appendix provides sample text to be incorporated into NASA LODs.

1. Customer Outcomes

Quality Assurance:

Outcome Objectives: Delivery of Conforming Product
Supporting Outcomes: [X]
Outcome Metrics: [X]
Performance Standard: [X]

2. General Requirements

2.1 The actions/tasks delineated in this document are not to be interpreted by the delegated agency, under any circumstance, as imposing requirements upon the contractor beyond those requirements formally set forth in the procurement contract(s). The delegated agency shall inform the assigned NASA Point of Contact (POC) of specific instances where the LOD appears to delegate verification of requirements that are not contractually invoked.

2.2 When implementing these requirements, the delegated agency shall use its existing administrative, operational, and procedural instructions to perform their surveillance activities. In the

event of conflict between the NASA LOD and the delegated agency's internal documents, the LOD takes precedence.

2.3 The NASA SMA representative assigned as the POC for delegated quality assurance functions is responsible for providing technical guidance and assistance to assure full implementation of the NASA contractual quality requirements. The NASA POC shall have direct access to delegated agency personnel involved in the contract surveillance.

2.4 The delegated agency shall independently perform inspections/tests after contractor personnel have made their acceptance decisions. In those cases where concurrent inspections/tests are necessary due to excessive costs, excessive time involved, or destructive testing, the NASA POC shall be promptly notified for agreement to perform concurrent inspections/tests.

2.5 Under no condition shall the delegated agency indicate as acceptable any characteristic that has not been personally inspected, witnessed, verified, or monitored. If a characteristic is inadvertently omitted or overlooked by the delegated agency, and it is not advisable to repeat the operation, the contractor's records and the delegated agency's records shall indicate this omission with the appropriate written notation. The NASA POC shall be notified of the problem within [X] hours, and the incident shall be included in the delegated agency's status report.

3. Safety and Mission Assurance Documents

The delegated agency shall obtain contractual specifications and standards, other than NASA documents, from [X]. NASA documents should be obtained from [X]. The NASA POC shall be notified immediately if documents cannot be obtained from these sources.

4. Surveillance Plan

4.1 Contents of the Surveillance Plan The plan shall include the following information (as specified by the NASA POC based on the extent of safety and mission assurance support to be provided):

a. Contract Review and Planning Document.

b. Skill Capability.

(1) In large resident facilities or for large tasks, an organization chart showing the numbers of personnel assigned to perform delegated functions, including series and job titles. In small plants, nonresident facilities, and on small delegations, the name of the safety and mission assurance representative and the immediate supervisor will suffice in lieu of an organization chart.

(2) Names of qualified and/or certified personnel; functional areas for which they are qualified and/or certified; and courses completed, including location and dates. The delegated agency must insure that all personnel that have functional responsibilities on this LOD complete course U07 Multifunctional support to NASA.

(3) Training schedule for skills determined to be necessary through the contract review. Nondestructive Testing (NDT) Level II & III expertise, in accordance with NASA policy, shall be maintained to support the LOD requirements. If workmanship or other special NASA training or certification is required, the delegated agency should submit a request to the NASA POC. If already authorized, the delegated agency should submit a schedule for such training.

(4) The delegated agency will provide dedicated personnel to support each post-flight disassembly operation. Team personnel must be fully cognizant of applicable engineering and safety

requirements and post flight assessment/disassembly procedures, and be capable of exercising independent technical judgment. The designated Point of Contact (POC) shall submit a daily assessment report to the safety and mission assurance representative.

c. Forms/Documents/Records. Identification of forms, documents, or records used by the delegated agency.

d. Workforce Estimate. The delegated agency shall provide an estimate of personnel hours planned for surveillance of the corresponding contractor activities. The estimate shall be submitted annually to NASA when requested. Mid-year updates to these estimates and a long-range (two-year) resource forecast shall also be submitted when requested by NASA.

e. Surveillance Functions.

(1) Document Review: Subsequent to the initial contract review, the delegated agency shall continuously review and evaluate the contractor's quality system procedures, technical products (e.g., data, drawings), and manufacturing work instructions to ensure compliance with contract requirements. Document review shall be performed on a periodic basis and whenever document changes are made that affect quality system processes or product attributes. Selection of procedures for review shall be based on criticality, complexity, cost, and importance of product/work documented in the procedure. Document review may be conducted as a separate process from, or in conjunction with, quality system evaluations. The method and frequency for accomplishing document review, including the list of procedures to be evaluated, shall be outlined in the surveillance plan.

As part of document review, the delegated agency shall ensure that the contractor's fabrication operations are controlled with detailed work instruction documents. These documents shall include detailed instructions for fabrication, assembly, and test; characteristics and tolerances to be obtained; provisions for inspection planning; and special environmental, handling, and safety instructions and precautions, as applicable. Work instructions shall be reviewed to the extent necessary to verify that contract requirements are properly incorporated.

(2) Product Assurance: The delegated agency shall assure product quality by product examination, process evaluation, and record review as follows:

(a) Product Examination: Supplier products shall be physically inspected, measured, or tested to ensure conformity to contract requirements.

(b) Process Evaluation: Supplier processes for manufacturing, fabrication, assembly, integration, test, and inspection shall be physically witnessed to ensure compliance with contract requirements.

(c) Record Review: Supplier records evidencing conformance to contract requirements shall be reviewed to ensure product and process conformance to contract requirements.

The selection, sample size, and frequency of product assurance actions shall be based on: (1) the criticality, complexity, cost, and importance of product supplied, (2) the complexity and maturity of the process performed, (3) personnel safety considerations, and (4) the supplier's past quality performance related to the product supplied or process performed. Product assurance attributes shall be identified on checklists or by other documented methodology. The control of monitoring and measuring devices used by the delegated agency to perform product assurance actions shall comply with the requirements that are contractually invoked upon the contractor.

The surveillance plan shall identify product assurance actions planned, including the specific products, attributes, processes, and records to be surveilled, along with sampling plans and surveillance frequency.

(3) Quality System Evaluation: The delegated agency shall evaluate the contractor's quality system to ensure compliance with invoked quality program requirements, including internally developed quality system procedures. The quality system evaluation may be conducted as a single audit or as a combination of discrete audits that collectively cover all required quality system elements. Quality system audits shall be performed and documented following written audit attributes, such as provided in AS9101, Quality System Assessment. The frequency of quality system audits shall be based on the contracted organization's quality history, but no less than once every two years. The surveillance plan shall provide the delegated agency's schedule and/or frequency for evaluating the quality system elements identified below. The quality system elements shown below shall be evaluated as applicable and as invoked by contract (note: for reference purposes, applicable sections of AS9100/ISO 9001 are identified below following the quality system element title). Additional amplifying guidance and audit attributes for evaluating quality system elements is provided in sections (4) - (13) below.

(a) Control of documents (4.2.3).

(b) Control of records (4.2.4).

(c) Configuration management (4.3).

(d) Personnel training, qualifications, and competence (6.2.2).

(e) Design and development control (7.3).

(f) Purchasing: Supplier evaluation/selection; purchasing information and flow-down of technical/quality requirements; verification of purchased product (7.4).

(g) Production control and process control (7.5.1, 7.5.2).

(h) Product identification, traceability, and identification of inspection/test status (7.5.3).

(i) Preservation of product; foreign object prevention, detection, and removal (7.5.5).

(j) Calibration and control of monitoring, measuring, and test devices (7.6).

(k) Monitoring and measurement: Internal audit (8.2.2); Monitoring and measurement of processes (8.2.3).

(l) Monitoring and measurement of product (8.2.4).

(m) Control of nonconforming product (8.3).

(n) Quality data analysis/trending (8.4).

(o) Corrective action (8.5.2).

(p) Other (identify below).

(4) Purchasing: The delegated agency shall review the contractor's procurement documents and controls over procurement sources. The review shall ensure the following:

(a) Procurement is from subcontractors which meet specified certification and qualification requirements (e.g., qualified products, qualified manufacturing line, personnel (NDT, workmanship), quality system).

(b) Required quality, item usage, and technical (quality inspection) requirements are complete, clearly defined, and accurately reflect contract flow-down requirements.

(c) Applicable documentation is referenced and special documents are provided.

(d) The Government Source Inspection clause is included for procurements which require Government Contract Quality Assurance/Government Source Inspection (GCQA/GSI).

(e) When a subcontractor quality program or inspection system plan is required to be prepared, submission is specified and is reviewed and approved by the NASA POC.

(f) A supplier rating system is in place based on established criteria, and it provides the basic data to determine subcontractor quality performance and trends.

(g) When the contractor utilizes a third-party accreditation program in lieu of directly performing supplier quality system audits, the delegated agency shall ensure that the program is approved by NASA. As a minimum, the delegated agency shall verify the following:

(i). The audit standards and checklists used by the third-party organization verify contract requirements.

(ii). The audit frequency is commensurate with the complexity of the supplies or services.

(iii). The subcontractor audits are conducted onsite.

(iv). The third-party organization has access to proprietary data required for auditing any subcontractor function.

(v). The audit reports are made available to the contractor and delegated agency.

(5) Verification of Purchased Product: The delegated agency shall ensure that procured supplies are inspected and tested upon receipt by the receiving contractor in accordance with approved quality program or inspection system requirements. The delegated agency shall review and evaluate the results of the contractor's receiving and test activities, including documentation, in sufficient depth to determine the following:

(a) Approved/qualified subcontractors and appropriate specifications were used.

(b) Procured supplies indicate evidence of quality assurance actions performed by the subcontractor and contractor in accordance with purchase requirements and are accompanied by required inspection, build history, certification, and test data.

(c) Procured supplies or accompanying records exhibit evidence of delegated agency quality assurance as required.

(d) Contractor performs sufficient verification of physical, chemical, or other test data to determine the validity of data received with purchased supplies when drawings and specifications include chemical and/or physical test criteria. When certifications and/or certificates of conformance are contractually authorized, the delegated agency shall ensure that the receiving contractor periodically verifies the validity of such data. The validation shall be accomplished using approved procedures for sampling, testing, source inspection, and data analyses. The delegated agency, as a minimum, shall compare the actual test data with the applicable drawing or contract requirements.

(e) The quality status of supplies is maintained during receiving inspection and test operations. This shall include physical separation and identification of supplies according to the requirements of the quality program or inspection system plan.

(f) Supplies and their records clearly indicate their acceptance or nonconformance status when released from receiving inspection and test.

(g) Released supplies are adequately controlled and protected for subsequent handling, storage, or use.

(h) The contractor initiates corrective action with the subcontractor on nonconforming supplies to prevent recurrence.

(6) Production Control/Process Control: The delegated agency shall ensure that the contractor establishes and maintains acceptable control of processes.

(a) In the event the delegated agency is prevented from evaluating the contractor's processes (including proprietary processes), the NASA POC shall be notified immediately so that appropriate action can be taken.

(b) When the contractor uses statistical process control techniques, the delegated agency shall ensure pertinent charts are updated and analyzed in real time. Delegated agency personnel involved shall be trained to comprehend the purpose of the techniques and be proficient in the interpretation of the data. The delegated agency shall ensure that corrective action is implemented immediately when adverse trends are noted.

(c) The delegated agency shall ensure that the contractor provides for the certification of equipment, software, and personnel for selected processes. Records certifying that tests have been performed and the results of such tests shall be maintained. Equipment, software, and personnel shall be recertified as indicated by the results of quality surveys, inspections, or tests, or when changes are made which may affect process integrity. The delegated agency shall verify that certified equipment, software, and personnel are used when required.

(d) Changes in contractually approved parts, materials, fluids, processes, or procedures shall not be accepted unless the change has specific approval from the procuring organization. Violations shall be reported immediately to the NASA POC.

(7) Control of Nonconforming Material: The delegated agency shall ensure that the contractor controls and processes established for control of nonconforming material are in accordance with contract requirements. This includes certain nondeliverable tooling, test equipment, and test software that could adversely affect deliverable hardware or software. As a minimum, the delegated agency shall perform the following:

(a) Ensure that nonconforming material is properly identified and controlled.

(b) Ensure that the contractor initiates prompt and effective action on nonconformances to prevent recurrence.

(c) Ensure that the contractor takes immediate corrective action when nonconformance trends indicate a process is not within acceptable limits, nonconformance reporting for accuracy, and assuring appropriate elevation to Senior Material Review acceptable limits.

(d) Review nonconformance records to determine the effectiveness of the contractor's corrective action system.

(8) Corrective Action: The delegated agency shall ensure that nonconformances and problems are documented in accordance with the contractor's trouble, malfunction, failure, and deficiency reporting and feedback system. Corrective Action Requests/NASA Deficiency Reports will be negotiated by the NASA POC and the delegated agency prior to issuance to the contractor. Contractor and NASA-generated reports will be promptly distributed to the NASA POC.

(a) Contractor investigative actions shall identify the root cause(s) of noncompliance and the

scope/population of noncompliant items.

(b) Contractor corrective actions shall include the correction, replacement, repair, or authorized disposition of noncompliant items/conditions, implementation of preventive measures to eliminate the causes of noncompliance, and validation that implemented preventive measures have effectively eliminated recurrence of the noncompliant condition.

(c) When the contractor is required by contract to participate in the Government-Industry Data Exchange Program (GIDEP), the delegated agency shall ensure that the GIDEP system is implemented. The delegated agency shall ensure contractor performance of proper investigative and corrective actions upon discovery of noncompliant conditions.

(9) Identification of Inspection Status: The delegated agency shall ensure that the contractor establishes and maintains a stamp or similar inspection control system commensurate with the contract requirements. The agency shall ensure that inspection signatures and stamps are legible, dated, and clearly identify the product or operation inspected.

(10) Configuration Control and Document Change Control: The delegated agency shall continuously review and evaluate the contractor's documented configuration and change management system. The contractor shall not be permitted to release or otherwise incorporate changes that violate these procedures.

(a) In some instances, contractor personnel may be authorized to initiate on-the-spot changes for supplies under contractor design control. The delegated agency shall ensure that changes are promptly and formally documented in accordance with the established procedures prior to shipping. They shall ensure that obsolete drawings are purged from the system.

(b) The delegated agency shall ensure that the contractor's specifications, drawings, and support documents are maintained to reflect all approved changes installed in the associated end item.

(11) Control of Monitoring and Measuring Devices: The delegated agency shall ensure that the contractor uses a documented metrology system that controls measurement processes and provides objective evidence of quality conformance. The system shall ensure that measurement standards and equipment are selected and controlled to meet the requirements of the contract. The evaluation should include, as applicable, the following:

(a) Special measurement standards and equipment (e.g., automatic test and checkout equipment).

(b) Article or material measurement process.

(c) Calibration measurement process.

(d) Traceability to National Institute of Standards and Technology.

(e) Handling, storage, and transportation.

(f) Identification and labeling.

(g) Calibration intervals.

(h) Recall system.

(i) Calibration records.

(j) Environmental requirements, e.g., environment at calibration laboratory and at actual test locations.

(k) Traceability of calibrated tools and equipment to the operations where used.

(12) Stores Control: The delegated agency shall review and evaluate the effectiveness of the contractor's control of supplies in storerooms and large assemblies or items not confined to store rooms for various reasons. The delegated agency shall ensure that the contractor's system of stores control provides effective protection for supplies subject to limited shelf life, quality deterioration, loss of identification, or damage due to the following:

(a) Exposure to adverse environmental conditions.

(b) Handling.

(c) Packaging.

(d) Stocking and distribution practices.

(e) Modification, rework, and repair.

(f) Configuration changes.

(g) Time.

(13) Training and Certification: The delegated agency shall review and evaluate the contractor's training, certification, and recertification of personnel for critical processes. The delegated agency shall ensure that the contractor has established and maintained a personnel training and certification program that provides for the following:

(a) Excellence of workmanship and personnel skills.

(b) Safe operation.

(c) Certification of personnel controlling or performing critical processes.

(d) Recertification of personnel based on contractor or Government observation of unsatisfactory quality of articles or services; changes in techniques, parameters, or required skills; or interruption of work period as established for the process or operation involved.

(e) Maintenance of personnel training, testing, and certification records.

(14) Foreign Object Control: The delegated agency shall ensure that the contractor implements and maintains a documented foreign object control program which involves:

(a) Measures to prevent foreign object contamination.

(b) Inspections to detect occurrences of foreign object contamination.

(c) Analysis of foreign object damage.

(d) Implementation of appropriate corrective actions to remove detected foreign objects and to restore the product to its designed configuration.

4.2 Submission of the Surveillance Plan

The delegated agency shall prepare and submit its surveillance plan within 30 calendar days after acceptance of the delegation. Surveillance plans shall be revised, as necessary, to keep pace with changes in the contractor's and delegated agency's operations. The plan and its revisions shall be reviewed and approved by the NASA POC. The plan shall be reviewed at least annually to determine need for revision.

5.0 Personnel and Staffing

a. The delegated agency shall assure the physical suitability of personnel, particularly where the hearing, visual acuity, and color determination requirements are specified by special process documentation.

b. The delegated agency shall notify the NASA POC of any proposed change in critical personnel prior to effecting the change.

c. The delegated agency shall ensure that its personnel are adequately trained, qualified, and certified in the technical requirements of NASA procurement, and in processing, fabricating, inspection, testing, workmanship, and NDT techniques. They shall establish a training schedule for all personnel requiring training and certification in NASA requirements.

d. Information concerning the experience, capability, and training of delegated agency personnel selected to perform work for NASA shall be made available to the NASA POC upon request.

e. A schedule describing the personnel hours planned for surveillance of the corresponding contractor activities shall be submitted in the first surveillance status report and modified as changes occur.

6.0 Reports

6.1 The delegated agency shall collect and analyze contractor quality data to identify problem areas (e.g., products, processes, operations, organizations), common deficiency causes, quality trends, defect anomalies, process variations, and Quality Leading Indicators. In addition to delegated agency data, other sources of data may include contractor-generated metrics, NASA-identified nonconformances, post-delivery quality escapes, and quality data reported by other Government agencies or third party registrars. Data shall be evaluated at established periodic intervals and results reported to NASA for the purpose of:

a. Adjusting the frequency and content of quality assurance actions, including allocation of quality assurance personnel resources.

b. Providing supporting rationale for acceptance/rejection of the contractor's quality system and/or written procedures.

c. Initiating corrective action based on identification of systemic problems and trends.

d. Sharing analysis with the contractor to identify quality system trends and areas of weakness.

6.2 The delegated agency shall participate in weekly telecons with NASA. Biweekly e-mail status reports are required from the Development Centers. The reports must address relevant issues requested by NASA.

6.3 The delegated agency shall report on staffing and work-hours expended by labor category (including sub-delegated work-hours) and by major delegated functions, including explanations of expended work-hours greater than or less than 15 percent of the projected work-hours.

6.4 The delegated agency shall immediately notify the NASA POC (or the initiator of the redelegation when applicable) of any of the following types of situations or occurrences:

a. Failures which occur during qualification, acceptance, and first article tests of hardware and

software.

b. Any unusual phenomena, occurrence, or difficulty, the detection and correction of which is not specifically contained in the applicable requirements.

c. Supplies/services already delivered/completed or ready for delivery/completion which require further evaluation, inspection, or test.

d. Noncompliant conditions or failure experiences potentially affecting delivered product safety, reliability, or functionality. Where noncompliant conditions might constitute evidence of possible fraud, malpractice, or other serious misconduct, the NASA Office of Inspector General shall be notified.

e. Designs or procedures which, although in compliance with current requirements, may compromise or reduce safety, quality, or reliability. Reasons for such conclusions shall be included.

f. Changes, waivers, deviations, or occurrences which could have an impact on quality, safety, reliability, schedule, or cost.

g. Work stoppages, including those resulting from contractor and subcontractor labor strikes and natural disasters.

h. Missed mandatory inspection points.

i. Changes in the contractor's safety, reliability, and quality program or inspection system affecting the level or degree of inspection or testing performed by the contractor, including status of contractor-prepared safety, reliability, and quality program or inspection system documents.

7. Design and Project Reviews

The delegated agency shall provide qualified personnel to participate in design and project reviews subject to the NASA POC approval. The purpose of this participation is to familiarize the delegated agency with project design, fabrication, and testing processes to support the implementation of the surveillance plan, including the selection of inspection points.

8. Special Surveys

8.1 General

When the delegated agency initial or continuous review identifies significant contractor/subcontractor safety, reliability, or quality program or inspection system deficiencies, the delegated agency may recommend to NASA that a special formal survey be performed. In addition, NASA may request the delegated agency to perform special surveys. The delegated agency shall establish a plan for conducting each survey to ensure all aspects of the contractor's/subcontractor's programs or systems related to the deficiencies are reviewed and evaluated. The survey plan shall be submitted to the NASA POC for approval. Upon completion of a survey, the delegated agency shall prepare a detailed report of findings and recommendations and ensure that the corrective actions are implemented and effective.

8.2 Site Surveys

The delegated agency shall conduct a detailed survey of the contractor's facility or facilities. The purpose of the survey is to determine the overall safety of the facility in preparation for future visits by Government personnel. The survey shall identify all hazards and recommend appropriate actions

to protect Government personnel, including use of personal protective equipment, required training, or other course of action. The survey shall be provided to the NASA POC [enter date].

8.3 Special Requests

a. The delegated agency shall perform special studies and participate in other designated activities as requested by the NASA POC.

b. As requested by the NASA POC, the delegated agency shall participate in the monthly program reviews, periodic delegated agency/NASA tag-up telecons, Technical Interchange Meetings, Software Quality Panels, Quality Leadership Forum(s), Joint Audit Planning Committee meetings, Conference on Quality in the Space and Defense Industries, and working groups determined by subtier quality delegations.

c. The delegated agency shall perform independent assessments to support the certification of readiness prior to each flight. The results of these assessments shall be formally documented and provided to the NASA POC.

8.4 Survey Reports and Corrective Action

Upon completion of a survey, the delegated agency shall:

a. Prepare a detailed report of findings and recommendations.

b. Ensure that the corrective actions are implemented and effective.

9. Mandatory Actions

9.1 The delegated agency shall perform independent product examination, process witnessing, or record review to ensure contract compliance with certain product attributes, process performance, and test characteristics as specified by the NASA POC. These requirements are designated "Government Mandatory Inspection Points (GMIPs)" and may be identified by the terms "witness," "inspect," "verify," or "confirm" as defined herein. The NASA POC will provide a list of mandatory actions and characteristics and/or provide criteria for selection by the delegated agency. Recommended mandatory actions selected by the delegated agency shall also be submitted to the NASA POC for approval. The established requirements (both NASA-provided and delegated agency-selected) shall remain in effect until changed by the NASA POC.

9.2 The delegated agency shall provide an electronic system for identifying and tracking GMIPs. The system shall:

a. Track both active and inactive GMIPs.

b. Be designed to allow for querying of open and completed GMIPs.

c. Be accessible by the NASA POC.

d. Provide direct traceability to the discrete item examined, process witnessed, or record verified, including the following, as applicable: part numbers, serial/traceability numbers, work authorization document numbers, and operation/step numbers associated with the GMIP.

9.3 The following requirements apply to performance of GMIPs:

a. 100 percent performance of all assigned GMIPs is mandatory. GMIPs shall not be sampled, waived, or deviated from by the delegated agency unless approved by the NASA POC and documented on a Mandatory Inspection Point (MIP) Variance Request form (provided herein).

b. GMIP performance criteria shall not be modified by the delegated agency except as formally authorized by the NASA POC.

c. The delegated agency shall not identify as acceptable any characteristic that has not been personally examined, witnessed, or verified.

d. GMIPs shall be performed after contractor personnel have made their acceptance decisions, except in those cases where concurrent inspections/tests are necessary due to destructive testing or to prevent excessive costs or potential time delays.

e. GMIPs shall be performed as late as practicable in the material fabrication/installation/ delivery cycle for circumstances where GMIP attributes can be altered (e.g., contamination).

f. GMIPs shall be performed at subcontractor facilities where performance at a later point in time or at any other location would require uneconomical disassembly, destructive testing, or special required instruments/gauges/facilities only available at the subcontractor location; where performance at any other location would destroy or require the replacement of costly special packaging, or where considerable cost to the Government or unacceptable delay in schedule would result from downstream identification of noncompliant products.

g. The delegated agency shall ensure that time-dependent GMIPs are incorporated into planning documents as "hold" points. Hold points apply for work operations requiring process witnessing and for work steps which occur immediately prior to operations which render the inspection attribute nonobservable or prevent the ability of the inspector to effectively perform the inspection without uneconomical disassembly or damage to the product.

h. The delegated agency shall work with the contractor to develop a GMIP notification process that assures sufficient advance Government notification of work operations involving GMIPs; that results in timely performance of GMIPs; and that results in minimal disruption to contractor work operations. Specific guidelines and requirements shall be established regarding contractor continuance of work operations in the event that the Government does not arrive within a specified agreed-to timeframe to perform an assigned GMIP.

i. The delegated agency shall respond to a contractor/subcontractor request to perform GMIPs/Government Source Inspection (GSI) in a resident facility within (x) days of notification and respond within (x) days in nonresident facilities. In the event this cannot be accomplished, prompt notification to the contractor is required and, if the situation cannot be resolved, the NASA POC will be notified.

j. The performance of GMIPs shall be documented and positively attested to by inspection stamps or by signature, legible printed name, and date. Where stamps are used, the requirements of Section 16 below apply.

k. The delegated agency or the NASA POC may select mandatory actions to be applied on a temporary basis depending upon quality data or adverse trends. All mandatory actions require the approval of the NASA POC prior to implementation.

9.4 Definitions

For the purposes of planning and implementing mandatory actions, the following definitions shall be used:

a. Inspection: Product examination, process witnessing, record review, verification, or confirmation as defined herein.

b. Product Examination: Physical inspection, measurement, or test to ensure product conformity to prescribed technical/contract requirements.

c. Record Review: Review and verification that recorded data properly evidences conformance to contract requirements (e.g., invoked drawings, specifications). Recorded data may document work performance, product attributes, product configuration, product performance, or quality assurance actions performed by the contractor.

d. Verification: Record review (see above) action related to verification of recorded data.

e. Confirmation: Record review (see above) action related to verification of contractor accomplishment of specified inspections. This includes stamp verification that the contractor properly assured characteristics met specifications.

f. Process Witnessing: To observe a contractor test or work process to ensure that the process is being correctly performed in accordance with prescribed procedures and contract requirements.

g. Work Stoppage: NASA reserves the right to decide if shipment of their hardware should be delayed. The NASA POC will provide special direction in writing to the delegated agency for certain Unilateral Conditional Acceptance situations.

9.5 The delegated agency is responsible for maintaining configuration control of the Government Mandatory Inspection Document (GMID) including approval of revisions. GMID revision control procedures will be specified in Surveillance Plan.

10. Delegated Agency Responsibility for Subcontractor Control

10.1 The delegated agency shall perform source inspection or audits at subcontractor facilities only where necessary to ensure that the contractor maintains effective control over subcontractors, or to perform GMIPS that cannot be performed at the contractor's facility without uneconomical disassembly, destructive testing, or special instruments/gauges/facilities that are only available at the subcontractor location. NASA may delegate the authority to conduct the subcontractor audit to the Contract Management Office (CMO) with cognizance over the subject facility. The delegated agency shall prepare a detailed narrative report of findings and recommendations and provide the report to the NASA POC. The delegated agency shall ensure that corrective actions are implemented and effective.

10.2 The delegated agency is authorized to redelegate functions delegated herein subject to NASA POC approval. To facilitate early delegated agency determination of the need for Government Contract Quality Assurance/Government Source Inspection (GCQA/GSI) and/or surveillance at subcontractor facilities and to avoid delays in the procurement cycle, the Agency shall:

a. Advise the contractor of any procurement potentially requiring GCQA/GSI and ensure the Government source inspection clause is included in applicable contractor purchasing contracts.

b. Prepare the detailed instructions for Letters of Redelegation (LOR) and submit to NASA POC upon request. A LOR shall accompany each GCQA/GSI request. These instructions shall be reviewed periodically and adjusted, as circumstances require.

c. The delegated agency shall instruct the lower-tier redelegated agency, by letter, how and to what extent quality assurance functions shall be implemented.

d. Redelegations shall include applicable portions of the NASA delegation, the name and business telephone number of the assigned NASA POC, the delegated agency contact, and detailed

requirements consistent with the criteria for GCQA/GSI.

e. If the redelegated agency declines any portion or all of a redelegation, the delegated agency shall attempt to resolve the differences. If unable to do so, the delegated agency shall immediately notify the NASA POC.

f. The delegated agency shall provide the lower-tier redelegated agency a copy of the purchase order or subcontract with the LOR.

g. The delegated agency shall ensure that the work-hours charged by the redelegated agency are reasonable and that redelegations are appropriately closed so that reimbursable costs are properly controlled.

h. The NASA POC shall approve all GMIPs/redelegated tasks to subcontractors.

i. A letter, denoting acceptance of the delegation, shall be executed by the redelegated authority and forwarded to the delegated agency where it shall be kept in the delegation files.

11. End Item Test and Inspection

11.1 General

Prior to end item test and inspection, the delegated agency shall ensure that all requirements for contractor fabrication, assembly, inspection, test, and software development have been met and that the end item is complete and is ready for test and inspection. Test and inspection of the end item shall be conducted in accordance with test and inspection documentation required by the contract.

11.2 Test Planning Instructions

The delegated agency shall use the following criteria and instructions in planning the operations for first article tests, qualification tests, acceptance tests, and design verification tests:

a. The item presented for testing must be of the configuration delineated by the latest contractual drawings and specifications unless otherwise authorized by the NASA POC, or in the case of subcontracts, by the prime contractor.

b. The test plans and procedures used by the contractor must be approved in writing, or as required, by contract.

c. The test setup, including test software, must be verified as being in accordance with test procedures.

d. Test equipment used in the performance of these tests must have verification of up-to-date calibration and must have been evaluated according to the requirements of the contract.

11.3 End Item Test Operations

a. Mandatory actions in contractor tests shall be witnessed by the delegated agency to ensure the authenticity of test data. Whenever data are recorded on automated equipment or software/firmware, witnessing/monitoring shall be accomplished at start and completion of tests and periodically during tests.

b. If a test criterion is not met and the contractor proceeds with testing at its own risk, the delegated agency shall take the following actions:

(1) Notify the contractor orally (follow up in writing as soon as possible) of the deficiency and that

continued witnessing does not constitute delegated agency acceptance.

(2) Continue to witness the contractor's performance.

(3) Record the contractor's action.

(4) List the requirements (including documentation) that must be completed prior to verification of test results.

(5) Notify the NASA POC immediately.

11.4 Modifications After End Item Test and Inspection

Subsequent to end item test and inspection, and prior to acceptance, the occurrence of any modifications, repair, disassembly, or damage resulting from mishandling shall void previous tests and inspections. The extent of delegated agency and contractor reinspection and retest shall be as authorized by the NASA POC.

12. Material Review Board (MRB) and Failure Analysis Participation

12.1 General

Delegated agency MRB and failure analysis representatives shall be selected on the basis of technical competence to make decisions and commitments necessary to achieve effective preventive and corrective action and appropriate disposition for the supplies involved.

12.2 Material Review Board (MRB) Requirements

a. The delegated agency shall designate its representative(s) and submit the name(s) to the NASA POC. Resume(s) of the education and work experience for each individual assigned this responsibility shall also be submitted.

b. When MRB authority is redelegated to a lower-tier delegated agency, the name and resume submittal shall be made to the delegating agency, and the MRB representatives shall be subject to the approval of the delegating agency.

c. The delegated agency representative on the MRB shall perform the following:

(1) Determine, upon receipt of nonconforming material, whether the material may be dispositioned by the MRB or whether approval by the contracting officer is required.

(2) Verify the accuracy and clarity of the discrepancy description on the MRB documentation.

(3) Concur in or disapprove contractor's disposition in accordance with contractor's NASA-approved MRB procedures.

(4) Place delegated agency inspection points in the disposition, as applicable.

(5) Provide results of MRB evaluation and recommendations when approval of the contracting officer is required.

(6) Follow up to ensure that pertinent document changes and final dispositions are made as authorized by the MRB and that disposal of scrapped supplies is appropriate. Verify the completion of repairs and accomplishment of preventive measures. Coordinate with the NASA POC prior to approval.

12.3 Failure Analysis Participation

The delegated agency shall participate in the examination of supplies that fail during fabrication and test at contractor facilities or are returned from NASA. Participation shall include the following:

a. Prior to the start of analysis, review the contractor's failure analysis plan for proper approvals.

b. Inspect all supplies returned (as received and unpacked) to verify reported nonconformances and possible physical damage.

c. Witness physical analysis and tests performed during failure analysis.

d. Review corrective and preventive actions and report to the NASA POC on their adequacy.

e. Follow up on all reports to ensure that resulting action is complete.

13. Delegated Agency Responsibility for Government Property Control

The delegated agency shall participate in contractor inspections of Government Furnished Property (GFP) upon receipt at the contractor's facility. GFP received by the contractor after normal working hours will be verified by delegated agency the next working day. If complex GFP can only be functionally tested after installation, appropriate action shall be taken to allow for such conditions. Government-acquired property being returned to the contractor shall be processed in accordance with the provisions of the contract.

13.1 Defective GFP

If GFP is defective, the delegated agency shall immediately provide failure and deficiency data to the NASA POC or cognizant NASA Center and the source delegated agency for corrective action. The delegated agency shall ensure that an accurate determination is made regarding cause and responsibility when GFP is determined to be defective during and subsequent to contractor receiving inspection. The disposition of such property which is received in a condition not suitable for use shall be as directed by the contracting officer.

13.2 Utilization of GFP

The delegated agency shall ensure that GFP is utilized only as authorized by the contract. Unless permitted by the contract, GFP shall not be repaired, reworked, replaced, or in any way modified without Government authorization.

14. Utilization of Inspection and Test Equipment by Delegated Agency Personnel

When the Government provides inspection and test equipment to be used by Government personnel or their designees, the delegated agency shall ensure that it is included in the calibration program of either the contractor, NASA, or the delegated agency, and that only qualified personnel are assigned to use it.

15. Evaluation of Deliverable Documentation

The delegated agency shall evaluate the following safety and mission assurance data delivered by the contractor: [List deliverables to be reviewed, this could include hazard analyses, fault trees, failure modes and effects analysis, critical items list, reliability/maintainability predictions, etc.]. The contractor deliverables shall be reviewed to determine compliance with contract delivery requirements (content, format, schedule compliance) as well as technical adequacy. Comments and/or recommendations concerning the deliverables shall be provided to the NASA POC within [X] calendar days of receipt from the contractor.

16. Quality Status Stamping and Control

16.1 General

Where the delegated agency elects to use stamps to attest to the performance of quality assurance actions, the delegated agency shall have established procedures for usage and control of stamps assigned to them. Stamp issuance shall be controlled to ensure that personnel issued stamps are fully qualified/certified to perform the quality assurance actions assigned to them. [Delegated agency stamps shall be used for NASA-delegated functions unless the appropriate authority issues NASA stamps.]

16.2 Application

a. Stamps shall be applied directly to inspected supplies unless it is impractical, is prohibited by drawings or specifications, or may degrade the quality of the supplies. Stamp impressions shall also be used on pertinent documents (e.g., planning documents, test data) to indicate inspection and test of selected characteristics. This applies to all phases of inspection and test.

b. Stamp ink and methods of application shall meet the same requirements as those imposed on the contractor, where applicable.

c. When supplies are not stamped, stamps shall be applied to tags, cards, labels, or other records associated with the individual items in accordance with approved procedures.

d. Stamp impressions shall be legible and durable and shall not overlap or interlock with other stamps.

e. Stamp impressions shall be dated and shall provide direct traceability to the individual applying the stamp.

f. Personnel shall stamp only those supplies and/or related documentation actually witnessed, verified, or examined by them.

g. Where stamps are applied to contractor developed/maintained planning records or data, the delegated agency shall ensure that such records are readily retrievable.

h. When the contractor uses a paperless manufacturing system, the delegated agency may utilize the contractors approved system for indicating quality status.

i. The delegated agency shall periodically instruct all personnel that are authorized to use stamps in the significance of stamp usage. Such personnel shall periodically sign a statement indicating that they understand that their stamp is a professional, individual warranty (guarantee) that they personally saw or performed the work (task) literally as required for the inspection action and as stated in the build records.

17.0 Software Assurance

17.1 Definitions

Software: Computer programs, procedures, rules, and associated documentation and data pertaining to the development and operation of a computer system. Software includes programs and operational data. This also includes Commercial Off The Shelf (COTS), Government Off The Shelf (GOTS), Modified Off The Shelf (MOTS), reuse, auto code generated, firmware, and open source software components.

For the purposes of this document, software is divided into two categories defined as follows:

a. Deliverable Software: Deliverable software developed and produced either as a contract end item or included as part of a deliverable end item (firmware/embedded software). It includes commercially available, reusable, or Government-furnished software, whether modified or unmodified, designated as part of a deliverable end item.

b. Support Software: Non-deliverable software (commercially available or user developed) used for development, fabrication, testing, or acceptance of deliverable software, firmware/embedded software, or hardware. It includes automated manufacturing, test, and inspection/acceptance equipment software, compilers, and software design, test, and inspection tools.

17.2 Requirements

a. Deliverable Software. The delegated agency shall perform the following and provide a written report of the results of these reviews, audits, and analysis:

(1) Review all contract deliverable software documentation to ensure correctness, consistency, and compliance with contract format and content requirements. It must include software requirements, user, and critical design documents. The delegated agency shall also ensure that associated test suites and test data are delivered to ensure performance of any regression testing for future changes (fixes and upgrades), or to check operations.

The software assurance program shall include processes for assurance of COTS, MOTS, and GOTS software addressing both the basic acquired software and any modifications or applications written to adopt them into the intended system. It includes verification of what licenses are in place, how are they transferred, and what testing was done to assure it works as needed.

(2) Ensure contractor conformance to approved software plans and implementing procedures.

(3) Ensure flow down of requirements to subcontractors.

(4) Monitor the requirements development process and ensure that all system requirements are allocated to software or hardware and are expressed in verifiable terms.

The delegated agency shall ensure that an audit (e.g. Functional Configuration Audit, Physical Configuration Audit) is performed prior to delivery to assure that all delivered products are complete, contain the proper versions, and that all discrepancies, open work, and deviations and waivers are properly documented and approved. Delivered software must be in the appropriate media.

(5) Monitor the design process and ensure that design standards are followed, all software requirements are allocated to software functions, and results of design walkthroughs or inspections are incorporated into design.

(6) Monitor the implementation process and ensure applicable coding standards are being followed and results of code walkthroughs or inspections are incorporated into the code.

(7) Monitor the verification and validation process and ensure test plans and procedures are adhered to, test results meet acceptance criteria and are documented, and nonconformances are documented and dispositioned in accordance with approved procedures.

b. Support Software. The delegated agency shall perform the following:

(1) Ensure that software is verified and validated prior to use and that changes to verified software are retested prior to use to ensure the software maintains its functionality.

(2) Ensure that verified software is uniquely identified and placed under configuration management control.

(3) Ensure that the physical software media is properly stored to prevent damage, loss, or unauthorized modifications. The software assurance program shall describe what metrics will be collected and reported in regards to the software assurance program activities. Those activities include, but are not limited to, collection and trending of quality metrics such as number of defects, defect type, during what phase of development, and how they were found.

17.3 Software Safety

The delegated agency shall ensure proper performance of key software safety program activities and the integration of safety into the software being produced. Software assurance periodically reviews and/or audits for compliance with the defined software processes for acquisition, development, and safety assurance of safety-critical software. The requirements in NASA-STD-8739.8, NASA Software Assurance Standard, are applicable to safety-critical software. Software safety analyses shall be conducted in conjunction with overall system safety analyses.

Identified software safety requirements and software hazard causes, contributors, and controls shall be recorded in an appropriate document and referenced in a safety plan.

18.0 Preservation, Packaging, Packing, Marking, Handling, and Shipping

18.1 Responsibility

The delegated agency shall ensure the following for all supplies shipped from the contractor's facility:

a. Supplies are complete and all required fabrication, tests, and inspections have been performed.

b. Inspected supplies and accompanying documents have been properly identified as to inspection status with appropriate NASA or delegated agency stamps or delegated agency accepted contractor procedures.

c. Required shipping and technical documentation, including approved waivers and deviations, have been provided.

d. All supplies are in the proper state of assembly and have been preserved, packaged, packed, and marked in accordance with applicable procedures and specifications.

e. Handling devices, environmental control methods, and transportation vehicles are suitable for supplies involved and are loaded to prevent damage.

f. The loading and transportation methods conform to applicable specifications and requirements.

g. Applicable safety criteria have been met.

18.2 Shipping Documents

18.2.1 The delegated agency shall ensure that the following information is on the shipping documents for the prime contractor: shipping address; contract number; contract line item number; prime contractor's name, part number, quantity; acquisition value; acquisition manufacture date; and special marking information when required. They shall ensure that direct shipments from subcontractors are identified per the prime contract requirement.

18.2.2 Specific authority from the NASA POC is required to ship supplies with open deficiencies, uncompleted actions, or shortages to the Government. Specific authority from the prime contractor is necessary to ship supplies with open deficiencies, uncompleted actions, or shortages from a subcontractor to the prime contractor. Concurrence of the NASA POC may also be required. Evidence of approval must be in the data package (e.g., open item authorization) and must be referenced on all shipping papers.

18.3 Data (Documentation) Packages

18.3.1 Prior to release of each shipment, the data package shall be verified for accuracy and completeness in accordance with contractual requirements.

18.3.2 Hardware Acceptance: The delegated agency shall review the Acceptance Data Package and other applicable documentation as directed by the NASA POC to ensure conforming hardware is shipped from the contractor's facility and meets the following requirements:

a. Hardware is complete and the required fabrication, tests, and inspections have been performed.

b. Required shipping and technical documentation, including approved waivers, deviations, and discrepancy documentation have been provided.

18.3.3 Specific authority from the NASA POC is required to ship hardware with open deficiencies, incomplete actions, or shortages to the Government. Specific authority from the prime contractor is necessary to ship hardware with open deficiencies or incomplete actions from a subcontractor to the prime contractor. Concurrence of the NASA POC may also be required. Evidence of approval must be in the data package and referenced on all shipping papers.

18.3.4 Prior to release of each shipment, a review of the data package shall be performed. This review will include review of the as-built versus as-engineered documentation listing for errors or unresolved issues. Also, surveillance of supporting documentation will be performed as needed to provide confidence that documentation represents the hardware presented for delivery

18.4 Removal from Shipping Container

When an item which has passed final test is removed from the shipping container due to an unplanned event, the NASA POC must be notified.

18.5 Special Provisions for Critical Items

18.5.1 When NPR 6000.1, Requirements for Packaging, Handling, and Transportation for Aeronautical and Space Systems, Equipment, and Associated Components, is contractually imposed, the delegated agency shall ensure that 1) preparation for delivery, 2) application of NASA-critical item labels, 3) preparation and processing of packaging, handling, and transportation records (as appropriate and required), and 4) selection of carriers are accomplished as prescribed therein.

18.5.2 When the contract specifies other special control of critical items, the delegated agency shall

ensure that items are prepared, packaged, and labeled per the contract for delivery and that provision for data packages (history jackets) are met by the contractor.

19. Supplies/Services Acceptance

19.1 General

The Material Inspection and Receiving Report (DD Form 250), when specified by the contract, shall be used by delegated agency personnel.

19.2 Delegated Agency Requirements

When required, the delegated agency shall ensure the contractor, in accordance with NASA FAR Supplement 1846.672, has prepared the DD Form 250. The delegated agency shall complete block 21A indicating contract quality assurance (CQA) has been performed and, when directed by contract, accepted. The following shall be recorded/reported on the DD Form 250:

a. Waivers and deviations from contract specifications, including the source and authority for the waiver or deviation (i.e., procuring installation issuing the waiver or deviation and identification of the authorizing document).

b. Authorizing documents for incomplete shipments (i.e., supplies shipped less components, accessories, or ancillary supplies).

c. Open items requiring completion that is being transferred.

d. Other information required by the contract.

e. If requested by NASA Engineering Offices, the delegated agency shall ensure that the designated NASA Engineering signature of concurrence of review of the DD Form 250 is provided in block 23. NASA Engineering concurrence must be obtained prior to the delegated agency's signature in block 21A and 21 B. This concurrence applies to Level 2 Deliverable Items List (DIL) items only. Level 1 and 3 DIL items do not require NASA Engineering signature of review on the DD Form 250.

f. Conditional Acceptance: For cost-reimbursement contracts, under special circumstances the Government may conditionally accept components which are needed in order to meet a specific time line, for delivery of a higher level or final assembly, or to avoid impacting mission schedule. Conditional acceptance of components, however, does not constitute, in any way, certification of integrity on received components. Following is a sample notification of conditional acceptance for cost-reimbursement contracts only:

(Name of contractor) has tendered ***(name item)*** to the Government for acceptance under contract (identify contract). The Government understands ***(name item)*** may contain parts or components which were furnished by ***(name subcontractor)***. The Government is currently investigating the activities of ***(name subcontractor)*** and is concerned that some or all of the parts or components furnished by ***(name subcontractor)***, and incorporated into ***(name item)***, may not conform to the requirements of this contract, ***(identify contract)***, and that because of this the ***(name item)*** may not conform to the requirements of the contract, to the extent that parts and components in them were furnished by ***(name subcontractor)***. However, because of the Government's urgent need for ***(name item)***, ***(name item)*** is being accepted subject expressly to the following conditions:

_____.

The acceptance of the ***(name item)*** does not constitute an agreement or acquiescence on the part of the Government that ***(name item)*** complies with the requirements of the contract, to the extent that parts and components in them were furnished by ***(name subcontractor)***, or that the parts

or components in the ***(name item)*** that were furnished by ***(name subcontractor)*** comply with the requirements of the contract, or with the requirements of any subcontracts of the contractor, irrespective of tier.

The acceptance of the ***(name item)*** does not constitute an acknowledgment by the Government of the integrity of ***(name subcontractor)*** parts.

The acceptance of the ***(name item)*** does not constitute a waiver by the Government of any rights, contractual, statutory, or otherwise, relating to any matter involving the production or furnishing of the ***(name item)***.

19.3 Subcontractor Shipments

When subcontractor shipments requiring Government Contract Quality Assurance (GCQA)/Government Source Inspection (GSI) at source are made to a prime contractor, the delegated agency may be authorized to indicate inspection on the subcontractor's shipping documents. If shipments are made from a subcontractor's facility directly to the Government, the delegated agency shall use DD Form 250, when required of the prime contractor.

19.4 Other Shipping Documents

19.4.1 For shipments using other shipping documents, the delegated agency shall indicate performance of procurement quality assurance (PQA) on the shipping document in accordance with NASA FAR Supplement 1846.671.

19.4.2 The delegated agency shall perform documentation reviews for shipments using DD Form 1149. JSC Form 290 or commercial shipping forms that support the delivery process; i.e., authorized shortages. The delegated agency will not sign stamp JSC Form 290s or commercial documentation but will audit the contractor's shipping and receiving process to insure that all items being shipped are accounted for properly.

20. Safety

20.1 Safety is a prime consideration in the conduct of operations. Delegated agency personnel performing functions for NASA shall know, understand, and comply with the requirements of the contractor's safety program. Delegated agency representatives who observe and recognize an unsafe operation or practice shall immediately inform the contractor operations personnel and shall also inform the NASA POC.

20.2 The delegated agency will perform surveillance on the suppliers' Industrial Safety Program to the extent that such surveillance is a consequence of the Quality Assurance Representative's (QAR) normal day-to-day activity. Those activities normally associated with an Industrial Safety Specialist may be performed, upon written request, on a nonrecurring basis. Upon request, the delegated agency will perform a one time detailed survey of a contractor's new facility to determine the overall safety of the facility in preparation for future visits by Government personnel. The survey shall provide a detailed narrative identifying all hazards and recommended appropriate actions to protect Government personnel, including use of personal protective equipment, required training, or other course of action. The survey shall be provided to the NASA POC no more than 30 days after the survey is completed, and delegated agency follow-up shall be conducted to ensure that corrective actions are implemented and effective.

The delegated agency will not perform industrial safety surveys of NASA-owned facilities but will notify NASA Industrial Safety of any unsafe conditions that may be encountered as part of the QAR's normal day-to-day activity.

21. Record Requirements

Delegated agency records shall be identified and traceable to the item, specific test or operation procedures, contract, and/or purchase document. When items are serialized or carry specific identification under a controlled system (i.e., lot numbers and date codes), such identification shall be documented on quality records. NASA terminology shall be used on quality records.

22. Channels of Communication

22.1 Communications with NASA

The NASA POC shall be the point of contact concerning delegated safety and mission assurance functions. The NASA POC shall have direct access to the delegated agency personnel involved in the contract surveillance.

22.2 Communications with Contractors

The delegated agency shall communicate directly with the contractor when performing delegated or tasked functions. Copies of any correspondence shall be provided to the NASA POC.

22.3 Intergovernmental Agency Communications

When functions have been redelegated, the delegated agency shall communicate directly with the lower-tier delegated agency in matters associated with the quality of the supplies or services.

23. Corrective Action/Discrepancy Reporting for Delegated Functions

23.1 When reviews, inspections, or tests reveal noncompliance with contract requirements, the delegated agency shall require the contractor to promptly initiate investigative and corrective actions. Corrective action shall be documented in accordance with delegated agency procedures and guidelines and shall, as a minimum, require that the contractor identify:

a. The proximate and root cause(s) of the noncompliance.

b. The scope/population of noncompliant items (based on the root causes).

c. Immediate corrective actions to correct, replace, repair, or disposition noncompliant items/conditions.

d. Preventive measures to eliminate the cause(s) of the noncompliance and prevent recurrence of the noncompliant condition.

23.2 The delegated agency shall selectively validate contractor accomplishment of corrective/preventive actions and the effectiveness of such actions. Selection shall be based on the assessed likelihood of recurrence and the criticality of the condition found to be noncompliant.

23.3 The delegated agency shall immediately notify the NASA POC of noncompliant conditions or situations that may compromise product safety, reliability, or functionality. The delegated agency shall provide a copy (electronic or paper) of completed Corrective Action Requests regarding such nonconformances to the NASA POC.

23.4 Discrepancies found during the performance of this delegation, which are not orally resolved,

shall be documented on the appropriate form identified in the Site Surveillance/Implementation Plan. NASA Deficiency Reports shall be submitted to the NASA POC for approval and subsequent submittal to, and resolution with, the contractor. The delegated agency will maintain the status of reported discrepancies and corrective actions.

24 Additional Requirements

MANDATORY INSPECTION POINT (MIP) VARIANCE REQUEST Sheet of

Contractor and Contract Number	Sub -System/Element	
Part Number	Document No.	Sequence
Initiator Name		Date

1. Description of MIP missed (waiver) or to be deleted (deviation).

2. Reason why MIP was missed or cannot be per formed, and preventive measures t o preclude recurrence.

3. Assessed risk to program/project .

4. Risk mitigation (in place of MIP) .

5. Remarks.

6. Signatures.

Delegated Agency _____ Signature _____ Dat e

☐ Approved ☐ Disapproved _____ NASA POC _____ Date